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Contents

Editorial

As my predecessor announced in his Post Scripts to the last edition of the Journal he has very deservedly been promoted and took over as Chief Executive of the Defence Medical Education and Training Agency on 4 May 2004. We wish him continued success and happiness in his new appointment. His good fortune lead to my good fortune and it was with great pride that I took over as MOIC INM and editor of the JRNMS on 26 April 2004 (the photograph of the supersession I hope shows my pleasure). On hand over we achieved two firsts. Philip Raffaelli was the shortest serving MOIC and I am the first Medical Services Officer to hold the appointment.

Life has been a whirl since 26 April 2004 and the Journal Editorial Committee has been very busy continuing the work to increase the subscriber base and encourage articles for inclusion. We have set a target of January 2005 to get the Journal back in synch with the calendar years. I am also very pleased to report that since the MDG(N) letter we have over 100 new subscribers with more applications coming in each day. To those new subscribers welcome and thank you for supporting the journal we will do our best to ensure you feel that the decision was a good one. A copy of a letter received after MDG(N)s entreaty was published in the Newsletter of the Sick Berth Staff and Medical Branch Ratings Association (DOC RN) is reproduced at the end of this editorial if ever one needed motivation to work hard to keep the Journal going or encourage to subscribe I believe this letter does it – so a very personal thank you to Mr Hill.

The next step is to consistently produce an enjoyable interesting and informative publication. To this end this will be the last "patchwork" Journal from edition 02/04 we intend to base each one around a central theme with articles of scientific clinical administrative or general interest around it. The first theme will be trauma and we have set a target of the end of October 2004 to have this finalised. the theme for 03/04 edition will be Sports Medicine with a target date of January 2005. We need contributions so please get out your pens or switch on your computers and get writing!! In addition to the theme and articles around it there will be book reviews service news current issues from the Medical Directorate obituaries and we would welcome amusing anecdotes and letters to the editor. From time to time we will include articles of historic interest and intend that 02/05 will have a Trafalgar/Nelsonian theme to mark the bi centenary. If you have a particular theme you would like to see included please let me know.

To help in the compilation Surgeon Lieutenant Commander Martin Randle (currently the DPMO in HMS Collingwood) has agreed to become the Deputy Editor and has already been an enormous help and encouragement to me. Commander Geoff Marshall continues to give his valuable time and expertise as treasurer and subscriber secretary in fact the influx of applications has consumed more of his time and we are very grateful to him for sparing it unstintingly. In addition to these two stalwarts many more people are working hard to achieve what you the subscribers want to revitalise and keep the Journal of the Royal Naval Medical Service going. The work involved in producing the Journal is not insignificant and is relentless if there is anyone who has a few hours a week to spare we would welcome more help in any aspects of production please call me if you think you could commit to help.

Rome was not built in a day nor will the Journal be revitalised overnight but I can assure you all of the Management Committees commitment to do our best please bear with us and contribute all you can to assist.

F Reed OBE

Lt Cdr G Marshall RN (Rtd)
Gosport

16th June 2004

Dear Sir,

In my "Doc" Rtd I have noticed a letter from generally I would be obliged if you would accept the enclosed cheque for £12.00 being 1 years subscript on

I do not like to see such things as this, feeling for lack of support. I am an Ex S.O. P.O (O), Ex 60819 and my wife was a Nursing Sister QARNNS I am 84 and she is 87 both met in 1942 in RNH Plymouth and have been married 60 years last Jan 20th

Hope I am here to send you a further £12 next year

I am
Yours sincerely,
Harry A Hill

Thank you Mr Hill your support is an example to us all and very much appreciated
Ed

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Primary Care

GP Symposium Proceedings

Surgeon Captain C J G McARTHUR MB BCh DRCOG DOccMed MRCGP RN

The Royal Navy Primary Care Symposium 2004 was held at BRNC Dartmouth 6 7 May Some 50 Medical Officers attended the Symposium and the Mess Dinner on the Thursday night Surgeon Rear Admiral FARQUHARSON ROBERTS opened the proceedings and outlined his aspiration to aggregate primary care under his administrative control

The first session was an update on Appraisal from Dr Steve VINCENT (Civilian Adviser in General Practice to MDG (N)) who had appraised some 27 Medical Officers during the previous year Unfortunately there is no central funding to employ Steve Vincent as an Appraiser this year However Medical Officers who would like Steve to undertake their appraisal this year should bids for funds (£410 00 per appraisal) at Unit level This was followed by a presentation from BMJ Learning describing an electronic appraisal folder and personal development plan that has been developed by BMJ Publications The service is free and subscribers receive weekly CPD updates Further information is available on www bmjlearning com

Feedback from last year s Symposium suggested that people did not favour a succession of Briefs from Senior Officers and commented that there was not enough time for questions In response to this a DIMBLEBY style Question Time was included in this year s programme A panel of 6 Officers from MDG(N) s Headquarters each gave a Brief (in some cases not so brief!) synopsis of the main issues that they were currently involved with The aim was to give an overview of the breadth of topics MDG(N) was dealing with to provide key information and to stimulate questions from the floor The panel comprised Surgeon Cdre T DOUGLAS RILEY (DMDG(N)) Surg Cdre F TOLLEY (DMEDOPS) Surgeon Capt J GABB (AD MED) Surgeon Capt D BROWN (DOH(N)) Surgeon Cdr Jeff NORWOOD SO1(PHM) and Surgeon Cdr Sally ROSS SO1(PC) The following topics were covered and evoked useful questions and debate

1 DMDG(N) the Defence Health Plan BR1991 1750 Revision F Med 1022 Complaints HQ Resources and Internal Communications

2 DMEDOPS Current Operations Disaggregation of the MSA Medical Support to the KFA Community Mental Health and the forthcoming DMEDOPS move to Whale Island

3 AD MED Pensions Appointing Commission Changes Promotion and the Higher Medical Management Spine

4 DOH(N) Medical Downgrading NSMBOS Recruit Assessment Self Harm Waiting List Initiative F Med 7A Aviation and Hyperbaric Medicine

5 SO1(PHM) Defence Medical Information Capability Programme Rehabilitation Services Fast Tracking Health Promotion Appraisal and Revalidation and the Management of Poorly Performing Doctors

6 SO1(PC) Clinical Governance the PCT Inspection Process Patient Group Directives and Prescribing

The final session on the first day was an update on the Defence Medical Information Capability Programme from Lt Cdr Mark TRASLER

A very enjoyable Mess Dinner took place in the BRNC Wardroom Surg Capt Calum McARTHUR (Advisor in General Practice(RN)) thanked Surg Lt Cdr Alan BOWIE (PMO BRNC) for organising the Symposium and Dinner and gave a brief overview of RN General

Practice during the past year MDG (N) presented this year s Alan HIRST Prize to Surg Lt Cdr Suzanne PORTER for her hard work and proactive management in HMS ALBION

The morning session on Friday started with a presentation on the New GP Contract delivered by two Practice Managers from Plymouth This was followed by interesting presentations from two Occupational Medicine Registrars Surgeon Cdr Daryl WYLIE described the NHS/Military occupational medicine interface and Surgeon Lt Cdr Richard WEBBER presented an occupational medicine/general practice case study

A session on complimentary medicine included presentations on Acupuncture and Chinese Herbalism and the Bowen Technique from 2 Practitioners from Torquay The final session was a Primary Care Rehabilitation Facility/Regional Rehabilitation Unit update from Major Graham LEACH the OC of the HMS DRAKE RRU

The Annual RN Primary Care Symposium is an opportunity for members of the regular and reserve RN primary care cadre (including GPs Occupational Health Physicians CMPs GPRs SHOs and GDMOs) to meet and exchange views and information Different Establishments take it in turn to host the Symposium volunteers for 2005 should speak with AGP RN All primary care practitioners are encouraged to attend

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Primary Care

The Use of Patient Group Directions in the Royal Naval Medical Services

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Abstract

As the first primary care nurse practitioner the author wished to explore the future use of Patient Group Directions (PGD s) within the Royal Naval Medical Services (RNMS) Extensive investigations carried out within the National Health Service (NHS) have resulted in changes in legislation allowing registered nurses to supply medications using PGD s The design and implementation of PGD s require a cohesive approach of a doctor or dentist a pharmacist and the lead health care professional In order that they are implemented in a safe and effective manner all concerned parties must undertake a robust education and training programme The RNMS will need to address a number of change management issues in order that registered nurses are supported in continuing professional development and PGD s are adopted as practice

Keywords

Patient Group Directions Change Management Legal

Background

The Medicines Act 1968 allows only doctors dentists and vets to prescribe prescription only medications however there is scope for others to administer these medications in accordance with written or verbal instructions of a medical practitioner The Department of Health commissioned Dr June Crown President of the Faculty of Public Health Medicine and Chairman of the Advisory Group on Nurse Prescribing (1988 1989) to head a committee to investigate issues around prescribing She produced reports in 1989 and later in 1998 that gave rise to changes in education and training of registered nurses The reports also instigated changes to legislation that would allow nurses to prescribe and pharmacists to dispense those medications [1,2] Consequently this resulted in the Prescription Only Medicines (POMS) (Human Use) Amendment Order (2000)[3] coming into force in August 2000 This order provides specific direction on when how and by whom a group protocol should be used These group protocols gave clear direction and guidance on the medication but were never clearly defined by law[4] therefore they are known legally as patient group directions

Taylor[5] highlights that for a successful outcome in the use of the PGD s there should be a common view of their use The professionals writing the PGD are responsible for ensuring that the practitioners using them are qualified and have undertaken an educational programme Leathard[6] states that registered nurses must have an understanding of the pharmacology of the medication at least at a basic level The British National Formulary (BNF) is a twice yearly publication which will highlight changes in medications legal status in order for registered nurses to remain current in pharmacological changes In practice it is common for the PGD to have a shelf life of two years before compulsory assessment occurs as routine [4] The Nursing and Midwifery Council [7] further state a patient group direction is a specific written instruction for the supply and administration of a named medicine or vaccine in an identified clinical situation PGD s are drawn up locally by senior doctors or if appropriate by dentists The team will also consist of a pharmacist and another health professional They must be agreed by a doctor or dentist and a senior pharmacist both of whom should have been involved in developing the direction and must be approved by the appropriate healthcare body Culley adds that the use of PGD s facilitate in ensuring that patients receive timely and appropriate medication and may maximise effectiveness of the service minimise risk to the patient and the service and also respect the choice of the patient

The NHS Executive suggests that the increased use of PGD s reflects the current climate in which nurses are extending their role within the realms of medicine supply in order to meet the needs of the service to provide effective and more convenient patient centred care Caulfield [2] identifies that as a profession nursing practice is often ahead of the current legal policy It is therefore important to remember the legal confines regarding prescribing Using a PGD does not alter existing principles of liability or professional accountability The NHS Executive[4] state Chief executives should ensure that any current or new patient group directions comply with new legal requirements

Failure to comply with the law could result in a criminal prosecution under the Medicines Act

Discussion

Implementing PGD s for use by registered nurses within the RNMS will have a major impact on current working practice within the organisation in both peacetime and operational environments Their use will improve the safety and effectiveness of care by developing and supporting the registered nurse ensuring that the RNMS have an auditable and standardised means of regulating practice whilst meeting clinical governance targets This will enable the development of primary care nursing potentially secondary care and in particular those within singleton billets However it should be noted that PGD s are clinical setting specific Clinical settings whether primary or secondary care in peacetime or in operations may use common templates with setting specific data added

Currently the nurse prescribing formulary is somewhat limited and there is a requirement for a formulated prescribing education programme In order that this may be achieved within the RNMS the introduction of a compilation of comprehensive PGD s is required However it is recognised that nurses should be able to opt in and out of PGD s Dimond [14] states that it is the nurses personal and professional responsibility to ensure that she is competent to undertake this activity and the onus is upon her to refuse to undertake it if there are reasonable grounds for believing that she lacks the capacity

If PGD s are to be implemented within the RNMS Flint & Scott [7] state that a competency framework should be used to achieve a safe and effective standard of clinical practice Brooks *et al* [5] highlight that the use of PGD's gives an accurate record-keeping tool This aids the audit process and is therefore something for the RNMS to consider when implementing their use The Kennedy report by the Department of Health [6] recommend the compulsory use of clinical audit by all healthcare professionals who are involved in clinical practice and that this should be incorporated into terms of reference Flint & Scott [7] also declare that if health care professionals are to practise safely and accountably demonstrate sound clinical judgement apply the knowledge and skill indicative of safe practice and maintain the necessary knowledge to practise both confidently and competently in a consistent manner a robust training programme and competency framework is vital [7] The recommendation is therefore that PGD s be developed and disseminated throughout primary care facilities both ashore and afloat within the Royal Navy The formulation of these PGD will necessitate the requirement of a competency framework which will be implemented and audited throughout the RNMS

Change Management

Illes & Sutherland [9] describe planned change as deliberate and a product of conscious reasoning and action whereas emergent change can unfold spontaneously The change of devising and adopting PGD s with the RNMS can be initially seen as both planned and emergent change There is a realistic need for planned change within the RNMS This includes a move to a recognised legal and safe method of administering medications to their Service and Civilian population group Emergent change include adapting current formulary supply services and education The Defence Nurse needs to be better prepared for work within primary care

Ackerman [10] shows three types of change in relation to the problem These are developmental transitional and transformational Developmental can be seen to be enhancing aspects of practice and is particularly useful when addressing a skill The transitional change is one that has evolved from work done by Lewin[11] It aims to achieve a known circumstance that is different from the current one The third is the transformational change This is rather more radical in it s nature and requires a complete organisational re-think as to

continuously learns and improves Transitional change involves those in tune with primary care and the nursing field but transformational change represents the majority of the RNMS Dawson [7] acknowledges that the change will probably be a non-linear process and may involve rather chaotic and heated discussions and may involve alterations to the original idea

A critical analysis of how PGD s may be implemented throughout the RNMS must allow the assessment of factors both internal and external to the organisation The author offers his perspective on how this may be achieved

Employing PGD s within the RNMS will provide a legal framework for the supply of medications by registered nurses This will promote safe practice using a standardised structure for medication supply

Surgeon General s Policy Letter [8] highlights that the Surgeon General s Department and the Defence Medical Services are promoting the use of PGD s at a high level and encouraging the adoption of such on the ground This was supported in December 2003 when the RNMS saw a change in its Medical Director General He firmly believes in the expansion of the scope of the Queen Alexandra s Royal Naval Nursing Service (QARNNS) with the employment of group practice prescribing rules and to see the first nurse practitioners deployed at sea [9] The effective use of the Egton Medical Information System (EMIS) primary care computer system will aid the use of PGD s It will allow the management of medication stock levels generate paper copies of medication for supply to the patient and a facilitate audit

The process of change takes time and effort on behalf of all those involved Changes in education and training including underpinning pharmacology theory and the actual practice of using a PGD are required In order to adhere to legislation regarding pack supply sizes there is a requirement for current stocked pack sizes to be reduced and stock levels to be increased

PGD s could be used throughout the Royal Navy Army and Royal Air Force in both primary and secondary care and in disciplines other than nursing This could include the education and training of other health care providers not currently able to supply under a PGD namely the medical assistants There is evidence that the National Health Service nurses are already well underway with the successful use of PGD s This emphasises a need to move with the times and move the RNMS forward

Medical officers may see the use of PGD s as a loss of control over prescribing Registered nurses could only supply under PGD and not on the request of the Medical Officer The use of PGD s will require structures that are not currently in place namely the collaboration of Medical Officers lead nurses and pharmacists The latter are not currently employed in primary care Currently few Defence Nurses have an interest in primary care within the Royal Navy this then induces a skills issue as there are few nurses undertaking programmes of education for the primary care setting To date the RNMS have only one degree level primary care nurse practitioner within the Service There is therefore a need for others to be educated to a similar standard

Conclusion

PGD s have been passed to SO1 Primary Care for perusal and verification Once this evolution has been completed it could prompt the requirement for primary care nurses to undertake an educational programme prior to employment within primary care In addition in order that safe and effective practice is adopted there is a need for global knowledge of PGD s within all aspects of the RNMS

Acknowledgments

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Primary Care

A New Era of Primary Health Care at the Maritime Warfare School, HMS Collingwood

Lieutenant L Hazard RN

Over the past decade Primary Health Care in the Defence Medical Services has changed significantly. A key external driver was the focal shift in the NHS from secondary to primary care. From within the Armed Forces the epochal end of the cold war to the sophisticated residual threat new technology and key initiatives has meant that supporting operational capability required a rethink in corporate strategy. From line core medical activities became the Royal Navy Medical Services Flagship and until recently PHC in shore Establishments was left largely unchanged.

Concentrating on one key Establishment the Maritime Warfare School HMS Collingwood Primary Health Care was given complete asset overhaul with the opportunity to make pioneering advances in the Gold Standard of medical care.

This was not a capricious move and predates the Defence Training Review (DTR) and against the backdrop of the Strategic Defence Review (SDR) where Flag Officer Training & Recruitment was tasked to review his estate requirement. Specifically FOTR was directed to make recommendations to reduce the number of training establishments required to meet the reduction of throughput expected in 2010-2015. The review was confined to the 6 major Naval Recruiting and Training Agency establishments and resulted in the Navy Board's decision to retain a core site in Plymouth and a core site in Portsmouth plus BRNC Dartmouth.

HMS Collingwood by virtue of its geographic location was considered the most suitable and became the single focus for maritime warfare training. Funding was agreed and existing financial arrangements allowed the development of an integrated Maritime Warfare School to commence as soon as 2002. Under the auspicious name of Project WARSPITE (Warfare School Project Implementation Team) an Establishment statement of requirement (SoR) was written which included the provision of primary health care as the capstone of the support assets for a PAR of nearly 4 000.

The options study concluded that the current Medical Centre (converted Senior Rate accommodation) was inadequate for expected training nor could expansion on the facility be supported as a viable option. This lead to the only available choice: a dedicated new build.

To ensure the acquiescence of the financiers a combined medical dental and UPO building was submitted and marketed as the Patient Administration Centre (PAC). Under Prime Contracts the Royal Navy and Flagship Training Limited went into partnership enabling a potential profit making venture (60:40 split in favour of the RN) whilst maintaining quality assurances.

Approximately £3.2m was put on the table and architects designed a building that fulfilled all requirements stated in JSP 315 – Scale 28 Medical & Dental Accommodation Edition 3 July 1999: no expense was spared. A Project WARSPITE Medical Advisor was employed to focus exclusively on the building project linking MDG's department, the Medical/Dental Centres and the NRTA construction implementation team together. The building has a construction totality time of 40 weeks and was designed to focus on future needs up to 2020.

A gold standard building will not ensure a gold standard service: therefore the internal mechanisms of the Medical Centre have been reviewed. As stated by the 2nd Sea Lord in the Personal Functional Standards manifesto: *Our people are our greatest asset*, and therefore it is quintessential that the scheme of complement reflects this quote. An experienced General

Practitioner heads the Medical Centre supported by a service deputy and two Civilian Medical Practitioners With the inception and integration of Clinical Governance 2 full time Practice Nurses will co ordinate procedures under the DPMO and a line for a Petty Officer Pharmacy Dispenser will ensure that Patient Group Directives in the dispensary are adhered to An equal and harmonious amalgamation of civilian and Service staff will ensure a continued Service footprint ashore whilst continuity of administrative care for our patients

To further emphasize the seriousness in PHC the Deputy Chief of Defence Staff (Health) introduced Primary Health Care Rehabilitation Facilities (PCRF) to the three Services The aim of this service is for patients with musculo skeletal injuries to receive specialist assessment within 2 working days and broadly speaking rehabilitation and return to work within one calendar month HMS Collingwood received funding for STP 04/05 to become a PCRF and will see an increase in another Physiotherapist and 2 Remedial Instructors whilst entering into a joint venture with the PT department for a rehabilitation suite/dance studio

Many other projects are planned for the new Medical Centre including the integration of th PHCIS onto the Establishment s Local Area Network and increased support and liaison with Phase II / III training with Sea Sense and th Command Training Group At any one time between 10 40% of the Royal Navy are training within the MWS which ensures improvements in the operational capabilities of Officers and Ratings for the Fleet The Executive and Training Divisions rely heavily on the Medica to provide first rate support to the Commander s mission statement which will be achieve through first rate people appropriately trained and equipped delivering a first rate service in a first rate building

The PAC will be named after HMS Hood a battlecruiser of world renown which was sunk by the Bismarck on 24 May 1941 with the loss of 1 424 souls and only 3 survivors In her day sh portrayed the symbolism of the Gold Standard for ships and Great Britain for well over 20 years The PAC will be operational from mid September 2004 opened by Lt Ted Briggs MB RN (Rtd) last remaining survivor of HMS Hood

Lt L Hazard RN is the Project Warspite Medical Advisor Maritime Warfare School HMS Collingwood

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Case Study

The First Fatal Case of Capnocytophaga Canimorsus Sepsis Caused by a Cat Scratch

Surgeon Lieutenant Commander C R MCLEAN RN
Mr R Hargrove
Dr E Bahn

Abstract
A case is presented of fatal capnocytophaga canimorsus sepsis caused by a neglected cat scratch. Although fatalities are known to occur as a result of sepsis caused by this organism, death following cat scratch transmission has not previously been reported. The case is important as it demonstrates how a seemingly innocuous injury can have devastating consequences that may have been prevented by simple first aid measures.

Keywords
Capnocytophaga, cat, fatal, scratch, sepsis

Case summary
A 76 year old woman presented to casualty with a 24 hour history of pain and cellulitis in an 8cm area over the dorsum of her left hand. Initially she reported no trauma but on close questioning she recalled that she had been scratched by her cat the previous day but had thought nothing of it. She was relatively fit and well with only recent medication for hypertension and hypercholesterolemia.

She was referred to the orthopaedic team with a differential diagnosis of possible gout, cellulitis or septic arthritis of the wrist.

Our assessment revealed that the patient was systemically well with isolated cellulitis over the wrist and hand with no tracking. Wrist movement was moderately painful though the range was normal. Her blood tests showed a normal white cell count (8.0 10^9/l), a C reactive protein (CRP) of 60 and an erythrocyte sedimentation rate (ESR) of 78. Her serum urate was within normal limits. The wrist joint was aspirated under local anaesthetic using an aseptic technique, the needle being passed through normal skin. The aspirate was negative for organisms, pus cells and crystals. Our presumed diagnosis at this stage was of an uncomplicated cellulitis and although the patient's temperature was normal it was deemed prudent to take blood cultures. Our treatment comprised intravenous antibiotic therapy (flucloxacillin 1000mg qds and benzylpenicillin 1200mg qds), limb elevation in a Bradford sling and a regular oral anti inflammatory (diclofenac 50mg tds). Six hours after her admission to our unit her clinical condition had deteriorated. She was confused, distressed, feverish (temperature 38.5C), tachypnoeic (respiratory rate 18), tachycardic (120 bpm) and hypotensive (80/40mmHg). She had developed a generalised purpuric rash, her limbs were swollen and warm and the cellulitis had tracked to the level of her elbow. She was deemed to be in septic shock. Fluid resuscitation was commenced, a urinary catheter was passed and oliguria was present. An arterial blood gas analysis was performed that demonstrated a partially compensated metabolic acidosis. Expert help from the intensivists was sought and our patient was transferred to the intensive therapy unit (ITU). On the advice of the microbiologists maximum dose clindamycin was added to her antibiotic regime. In ITU she was ventilated and rapidly became dependent on inotropes (dobutamine and noradrenaline). As her condition worsened she was haemofiltrated.

Despite her condition worsening she never mounted a white cell response though her CRP rose to 200. This may have indicated a degree of physiological age related immunocompromise. It was noted that her tracking cellulitis demarcated at the level of her elbow after her first dose of clindamycin. Despite the efforts of the intensivists she deteriorated through renal and liver failure to multi organ failure and died almost exactly 24 hours after admission. Her blood cultures were positive for Capnocytophaga canimorsus (DF 2), the organism was sensitive to flucloxacillin and clindamycin.

Discussion

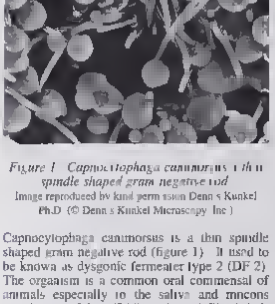

Figure 1 Capnocytophaga canimorsus, a thin spindle shaped gram negative rod
Image reproduced by kind permission Dennis Kunkel Ph.D (© Dennis Kunkel Microscopy Inc.)

Capnocytophaga canimorsus is a thin spindle shaped gram negative rod (figure 1). It used to be known as dysgonic fermenter type 2 (DF 2). The organism is a common oral commensal of animals especially in the saliva and mucous membranes of dogs (24%) and cats (17%) [1]. It is slow growing in culture taking an average of 5 days to incubate from blood cultures. Only a handful of the 200 000 dog bites that occur in the United Kingdom every year become infected with Capnocytophaga canimorsus [2]. Infections associated with cat bites and scratches are even more rare. Fatal sepsis caused by a cat scratch has not previously been reported. Capnocytophaga canimorsus was first reported in the United Kingdom in 1979 [3] and has been linked to fatal infections especially in immunocompromised patients. In splenectomised patients it has been linked to both fatalities and unusual presentations such as acute abdomen and myocardial infarction [4,5,6]. Overall fatality rate with an asplenic patient may be as high as 25%. Capnocytophaga canimorsus can present in many ways including meningitis in the newborn [7], respiratory failure, purpura fulminans, disseminated intravascular coagulation, heart failure and endocarditis [8]. The fact that it is slow to culture often means that early clinical suspicion is paramount in recognising and treating the infection as cultures will often be negative initially. Capnocytophaga species are susceptible to co amoxiclav, most beta lactam antibiotics, chloramphenicol, erythromycin and tetracycline [9]. Although about 80% of serious complications and fatalities occur in the immunocompromised or asplenic patient [10], fatalities can and do occur in the fit and healthy adult and child.

Conclusion

Medical officers afloat and ashore need to be aware that although rare any form of cat or dog bite or scratch no matter how trivial has the potential for disaster. First aid measures such as wound cleansing with simple soap and water is an effective initial treatment for these injuries. In the event of cellulitis complicating such an injury prompt treatment with high dose intravenous antibiotics, early surgical debridement if considered necessary and admission to hospital are all mandatory but the most important factor has to be a high index of clinical suspicion for this rare but potentially devastating infection.

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Operational

Operational Dentistry

Surgeon Lieutenant (D) G A MURDOCH RN

Military dentists are often asked "What exactly is your war role?" The traditional response is that we often try to conjure up extra roles for ourselves such as dealing with facial trauma injuries and acting as Triage Officers. I more than others have been guilty of this having often felt the need to justify my operational military existence. The answer to this question is actually very simple. Our operational military role is dentistry.

The experience of producing this document is based on serving with the Royal Marines of Commando Logistics Regiment (CLR) for the past 17 months where I was initially attached to Medical Squadron and subsequently Headquarters Squadron with the re creation of the Regimental Aid Post (RAP). The RAP consists of a primary medical and dental facility and a Field Records Office. This unit now deploys with the Squadron main body providing immediate life saving treatment to injured personnel.

Standard Operating Procedures dictates that during exercises and operations the Unit Dental Officer adopts the role of Triage Officer effectively pushing dentistry aside. Whilst this is acceptable when the RAP is receiving and treating mass casualties during quieter periods (often the case as a supporting unit) the Dental Officer should be fully utilised in his or her primary role.

Op TELIC has provided a platform to explore and expand the employment of the Dental Officer and hopefully alter this perception. With perhaps a little scepticism from within both the Regiment and 3 Commando Brigade RM often due to a lack of understanding of the benefits of forward dental care, CLR RAP deployed on operations for the first time with a full Portable Dental Unit (PDU).

The PDU was operated by myself and MA(D) AdamWalmsley. We were able to provide a full dental service during the initial preparations for operations. In the forward mounting base (Camp Gibraltar) we continued with regular treatment, maintaining the dental fitness of CLR. Due to operational circumstances and the triage commitments of other Brigade Dentists it became apparent that we were the only working dental facility in Kuwait (and subsequently Southern Iraq) for the majority of 3 Commando Brigade RM, a total of some 4200 personnel. The forward positioning of the PDU substantially reduced patient travelling times/distances ensuring that operational capability of sub units remained unaffected by dental problems.

As the start of hostilities approached the need for dental care was once again questioned. The full benefits of a forward located PDU were recognised with the provision of some surprising statistics. Within the first 6 weeks of the operation over 80 pain cases were treated, returning personnel to their place of duty and fit to fight free from pain. The PDU subsequently held its status within the RAP and was reallocated to Tactical Assembly Area Viking on 13 Mar 03 with the majority of 3 Cdo Bde RM.

Situated literally in the middle of nowhere the environment was extremely severe. There was no protection from artillery fire or air attack any infrastructure or simple life support necessities such as running water, mains electricity or ablutions. This combined with loose soft sand underfoot provided daily a substantial challenge. PDU's due to their lack of robustness are temperamental at the best of times but become even more difficult to maintain during the frequently encountered sandstorms as do the operators! The diesel generator designed to provide electricity failed frequently, often during

critical stages of treatment This caused added anxiety to the patient Lack of water caused problems with cross infection controls and dental materials were affected by extremes in temperature (temperatures ranged from 3°c to +37°c)

As D-Day approached the dental department switched from annual inspections and routine treatment to pain cases and emergencies only Treatment became more focused on pain relief as opposed to definitive treatment Dental pain and its effects are often not acknowledged it can be so distracting that patients will lose sleep This results in the patient suffering from lack of concentration and ultimately diminishes their combat effectiveness They can be a danger and a hindrance to their comrades as F Echelons (Fighting Troops) this condition is unacceptable in the battleheld

At the start of hostilities we were located approximately 15km behind the frontline In the first few days we often had to take cover from mud missile attacks leaping into shell scrapes (a shallow trench) whilst scrambling for our full body armour and helmets The threat of chemical attack was ever present and it was not uncommon to have to wear a respirator in response to a chemical alarm several times a day We continued to perform dentistry through all of this One particular problem encountered was that a patient required root canal treatment (RCT) of his central incisor confronting me with a medico legal dilemma On one hand should I continue with RCT applying full rubber dam therefore increasing the respiratory masking up time (this should be completed in less than 9 seconds) This option could have lead to a possible risk of the patient gagging or worse suffocating on the rubber sheet On the other hand do I ignore protocol and carry out RCT with no rubber dam using floss on files and gauze over the airway The options were quickly explained to the patient and not surprisingly he opted for a rapid masking-up

Every single day so far during Op TELIC I have treated a dental pain case totalling over some 160 patients Had the PDU not been deployed as a dentist I would have been largely unemployed resulting in a misuse of available expertise 3 Cdo Bde RM personnel would have suffered from a lack of any dental treatment One particular marine from 42 Cdo RM who returned from the frontline having only managed 3 hours of sleep in 3 days due to toothache with only 2 hours to wash and sleep before re-tasking certainly would not have had treatment To date there has only been one incident where there was a requirement for the triage role and this was at a basic level

Experience thus far on Op TELIC has justified the requirement for the deployment of a full active PDU Lessons learnt and the statistics given provide the necessary support for dental officers to deploy in role on future military operations In a Brigade stretched for manpower within the F echelons even one marine kept operationally fit is surely sufficient justification for deployment? You may ask "What is a dentists war role?"

Ask 160 patients (And rising)

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Training

Working Abroad as a Military Trainee

Surgeon Lieutenant Commander R M Heames RN

Key Words training overseas

Introduction

The chance of working in a foreign country should be taken if at all possible as it can provide a fantastic experience for all the family and broaden everyone's horizons. I do not think you ever get a true feel for a country unless you have lived there and the way another country functions is often fascinating with many positive attributes that you wished were present in the UK and a few negative aspects that can make you appreciate home. One of these latter aspects which I have much more respect for now is the National Health Service.

This article is designed to provide some guidance for those specialist registrars who wish to work abroad for a year. It is not comprehensive and references will be made to other sources where further information can be obtained. It is also slanted towards anaesthesia and working in Canada although the core should be relevant to all countries and specialties.

Preliminaries

Firstly, you have to decide if you want to work abroad and it is certainly not for everyone for a variety of reasons. There is usually some form of entry criteria which in most circumstances is having passed the diploma of your college (e.g. FRCA) and being some way into training as a specialist registrar (SpR).

One of the initial decisions is a frank discussion with your family to see if moving and working abroad is achievable. The upheaval for some with children at school may be too much. You will have to bear in mind that your spouse may not be able to work and caring for children without any family or friends support can be hard and should not be underestimated.

The next step is choosing a country. In most instances unless you are fluent in another language the country you select should be English speaking. This does limit the choice somewhat and the most commonly visited countries are Australia, New Zealand, South Africa, USA and Canada. Of course the voluntary organisations (e.g. Voluntary Service Overseas, Medecins Sans Frontieres) should not be forgotten although they probably count as an out-of-programme experience rather than as a year of specialist registrar training.

Selecting a hospital to work in can be just as challenging. The easiest way is to either speak to colleagues who have been abroad or consult your Royal College, as most colleges have databases of information on foreign hospitals where people have worked. The internet has allowed easy access of information and rapid communication with places the other side of the world. Many hospitals and universities have their own web sites which at the very least should provide a contact name and address and very often contains dedicated pages for Overseas Fellowships.

Before you go any further in establishing a post for yourself, you need to test the water with two important people who can make or break your ideas. The first is your specialty Defence Consultant Advisor (and your Single Service Advisor if different). They should have a long term plan and be able to inform you if you can be spared for your chosen year or if you have an unexpected trip to Iraq looming. You should be able to negotiate dates to be mutually convenient. Once armed with these potential dates you should speak to your NHS Programme Director to ensure that they approve in principle and that you can be spared from the region.

Finally, you are now ready to fully open the channels of communication and start the letter

writing The whole process can take up to two years to complete due to the mound of paperwork but with prior knowledge and e mail communication it can easily be done within one year

Getting Approval

Approval has to be obtained from several sources

1 Your chosen hospital
2 Your Royal College
3 Your NHS Programme Director
4 Your Defence and Single Service Consultant Advisor
5 The Defence Post Graduate Dean
6 The Appointer
7 The MOD bean-counters

It is a daunting list but fortunately most sources require similar information Now is the time to update your curriculum vitae (CV) portfolio and logbook and get three referees to write good things about you (one should be military if possible)

1 The Hospital Abroad

An initial e mail to your contact is the best starter I personally think that a written letter should follow up all e mails as electronic communications have a habit of going missing at a critical juncture The initial letter should outline your background emphasising both military and medical aspects It should contain why you want to go to that hospital and what you hope to achieve in terms of clinical experience and/or research There is no harm in saying at this point that if accepted the military continue to pay your salary therefore you do come free It is surprising how much of an incentive that can be

This is usually followed by a formal application which may be a form provided by them or a covering letter from yourself and inevitably requires a copy of your CV portfolio logbook and reference letters At this point you can specify dates and request a returning letter outlining the job description with aims and objectives for the year

2 The Royal College

Undertaking a year abroad can be taken as an out of programme experience i e in addition to the SpR training or as one of the SpR training years The military tend to be [illegible] former as in the current [illegible] shortage anything which increases your length of training is delaying the number of available consultants Hopefully this will change in the future

In order to have the overseas training recognised a set number of criteria usually have to be filled Appendix A indicates the information necessary for the Royal College of Anaesthetists Of note is the fact that prospective approval must be obtained

3 The NHS Programme Director

This is usually a minor formality You will have already spoken to him and hopefully agreed the time spent abroad and he will undoubtedly be keen to receive an updated CV portfolio logbook copy of approval from the Royal College and letter outlining the job description with aims and objectives for the year

4 The Defence Consultant Advisor (DCA)

The trick here is to give him a complete and solid package making it as easy for him to approve Approval is highly likely to be denied if equivalent training can be gained in the UK and if it is of no real benefit to military medicine In other words South Africa can be sold in terms of exposure to gunshot wounds for example but asking to do paediatric intensive care in Hawaii will probably be refused Creative thinking and tactful handling can persuade your advisor to do something out of the norm i e if you want to do obstetrics then you could pass it off as exposure to major haemorrhage and as the caesarean section rate is higher in the USA comparable training is therefore not obtainable in the UK You will need full backing from the DCA so you do need to convince him As ever he will want copies of all letters received so far and an updated portfolio There is no point in formally applying to the DCA until you have approval from the above three

5 The Defence Post Graduate Medical Dean (DPMD)

The step starts getting easier The DCA will write to the DPMD on your behalf with all of the previous relevant signed and approved paperwork If everyone has approved so far it is unusual for the DPMD not to approve

6 The Appointer

At the same time as writing to the DCA to gain acceptance copy everything to the appointer He

will then have an [illegible] up to what is being planned and can ensure that you are not on the Emergency Relief Pool or about to be sent away He will need a copy of the approval from the DCA and DPMD and he will no doubt like a copy of an updated CV for your personnel file After he has received it make an appointment to see him and hopefully this will still be 6 months before you plan to leave Once again if the above 5 people have given the go ahead it is unlikely for the appointer to refuse and it gives him an opportunity to find out why you wish to go what you hope to achieve how it benefits the Navy and what you want to do on return to the UK You must persuade him to include you on the next Officers Appointing List (OAL) as it is impossible to action anything else until you have an OAL reference number

7 The MOD Bean Counters
No more work to do now The Appointer will compose a letter justifying the expense (incidentally this includes your salary travel local overseas allowance (LOA) subsistence moving expenses disturbance allowance furniture storage and health cover for you and all your family) and emphasising the benefit to the military

Leaving UK
Armed with an OAL reference you can start planning the finer details of your trip abroad The most exciting part is getting flights sorted which is organised (via the Royal Navy Overseas Support RNOSU) by the Defence Transport & Movements Agency (DTMA) Many aspects of working abroad are covered by the RNOSU so it is sensible to arrange one afternoon to go in and see all the relevant people and get the paperwork correctly completed The flights are initiated by Movements (a Regulator) You have to visit the British High Commission or its equivalent on arrival in your chosen country for more paperwork and this can be a long way from your final destination so Movements will have to know if you need an additional flight stop

The next desk to visit is Relocations They will be able to give you advice on disturbance allowance unaccompanied baggage moving expenses furniture storage and expenses claimable for renting out your house

The last desk to visit is that of the Section Writer He will tell you the amount of LOA you are entitled to and advance of pay He will also be able to sort out an allocation of your monthly pay to be paid into your UK Bank Account if required with the remaining monthly salary being paid in local currency into your foreign bank account

Visas are highly dependent on the country visited and it is often possible to travel on a NATO Travel Order However doctors working abroad are unique as they are almost never working for the military of the host country but in fact working in a pure civilian capacity Unfortunately civilian rules apply and in order to get a work permit you must get the application forms and details from the relevant embassy This is usually a laborious process and may involve a medical and can take up to 3 months to complete All fees incurred may be claimed back from the military

In order to book flights for you and your family two important facts are needed by DTMA Firstly they need a definitive flight plan and dates with photocopies of passports for all the family Secondly they need to have received the completed medical forms for your family This means getting a medical done for your spouse plus any children It is paid for privately although can often be done by your family GP Once again the military will pay for the medicals Flights are usually business class if they are over 4 hours in duration and you even get a fully booked seat for all children no matter what their age

Any luggage or belongings that you wish sent out to your new home (i e everything except what you are taking with you on the aeroplane) counts as unaccompanied baggage The quantity which you are allowed is based on rank and number of personnel travelling It is in the order of 10 m This is a huge space which allows the taking of children s toys bicycles golf clubs books clothes etc It is probably best not to try and fill up the 10 m³ as you will inevitably buy new toys and gadgets in the foreign country which will need to be shipped back Some people have even brought back speedboats and cars The company shipping your Unaccompanied Baggage will pack everything up around 4 weeks before your departure Any remaining furniture and other goods remaining in your abode can get stored at military expense and this is packed and removed during the week that you leave

Accommodation

If you are lucky you could be taking over from another military doctor so it may just be a case of moving into their house If not you have the difficulty of arranging accommodation for you and your family often via the telephone and internet from thousands of miles away You are faced with two options Firstly you can rent a house unfurnished and on arrival buy furniture for it (this can be claimed back from the military and there are guides on how much you can spend for each room) This needs to be inventoried and at the end of the year the onus is on you to sell it and give the proceeds back to the military

Alternatively you can rent somewhere furnished which is the easiest option You are entitled to the equivalent of a Married Quarter pertaining to your rank and number of children Of course you can go smaller and rent an apartment in the middle of town if you so desired There are price guidelines for renting property but they are usually flexible

A good website to start the process with is Sabbatical Homes This provides access to homes all over the world usually let by professional people Obviously you can contact the hospital and any other doctors doing fellowships out there As ever the internet can access the information you need by visiting the web pages of local newspapers and checking out the house rental adverts section

The process can be unnerving as there is little comeback You create your own tenancy contract and often have to send out a deposit of one month s rent before ever seeing the place Once the home has been organised you send a copy of your contract/rental agreement/rental receipt to the Unit looking after your administration and they will pay you the monthly rent Your pay statement will show the equivalent in Married Quarter charge deducted along with the annual tax

Important Documentation

You will be taking your most important life s documents with you so I recommend getting a sturdy lockable brief case which you can carry as hand luggage for the journey The essential documents required can be divided into medical and non medical and are listed at Appendix B

Arriving at Destination

Fantastic you have made it No doubt you will arrive late at night jet lagged and all you want to do is quickly get to your hotel room However as tired as you are stop and go to customs at the airport to clear your unaccompanied baggage It is a pain and adds on another hour but it will save you a lot of time in the long run Customs will want to see the contents list of your unaccompanied baggage passports and work permit (temporary resident visa) amongst others Eventually with some persuasion they will stamp your forms which will allow you to claim your unaccompanied baggage

Time to relax and have a drink The following day visit the local British High Commission or your friendly British Defence Liaison Service (BDLS) You will be expected to attend in jacket and tie so make sure it is packed and handy Once there you will meet your new Commanding Officer or his deputy for a brief chat followed by the essential form filling with the writer/clerk The latter should provide you with the final information required to have a pleasant stay

The writer will inform you of your allowances in terms of LOA and will refund you your taxi bills hotel bills and subsistence He will explain the rules and will be your admin point of contact. Befriend him It is often worthwhile having your spouse with you as they will often remember the questions you forgot to ask By the time you leave you want in your hand information about claiming medical/dental treatment a letter stating you are exempt from the local driving test and a letter stating your name salary and that you have a good credit history This last letter is essential if you want to get a local credit card as you have no credit history in your chosen country

The last port of call is the arrival at your rented home If you have been unable to find one before arrival the military usually finance a couple of weeks in a hotel with car hire The following is a list of things you need to do over the next few days and before you start work. They are not necessarily in order of importance

1 Find rented home and move in
2 Buy a car and car seat if appropriate
3 Get car insurance
4 Visit a bank and set up an account

Get a credit card if required
5 Set up your link to the world wide web
6 Get a land phone line and probably a mobile phone
7 Register with local medical college in order to work (see next section)
8 Get socket and charge adapters if you have bought out home electronics
9 Ring your agent to arrange delivery of your unaccompanied baggage
10 Arrange house contents insurance if appropriate
11 Set up the remaining utilities (gas electricity water sewerage etc)
12 Ring the cable company to get your TV working

Registering to Work

You will be unable to work until you have registered with the local equivalent of the GMC so you need to pay them a visit in person within the first few days of arrival and certainly before you are supposed to start work Prior to your arrival they should have completed a Criminal Records Review to ensure you are not the next Harold Shipman in the making They will wish to see a letter of employment offer your immigration documents your original medical degree your original specialty diploma a Certificate of Good Standing from the GMC a CV a letter of authorisation from the local Dean of Postgraduate Medical Education and money In return for all that effort you will receive a slip of paper licensing you to practice

The next issue is medical protection insurance which is vital Many hospitals often pay the cost of your medical insurance or include it in your salary Canada is different and you have to obtain it yourself This can often be done over the phone and inevitably involves a further swipe of the visa card However once you have a receipt for the monies paid you can write a kindly letter to the Institute of Naval Medicine (INM)* stating that you have had to pay for the equivalent of Crown Indemnity (covered by the NHS or military in the UK) and a refund will wing its way back to you This also applies to any money paid to obtain your licence certificate as you will still have to pay for registration to the GMC

It is polite to touch base with the hospital and meet your supervisor/tutor before your official start date This gives you the opportunity to have a good look around ask questions and get the equivalent of the Holy Grail – an ID card allowing you access everywhere in the hospital No doubt you will have to visit the personnel department and sign a contract Even if it is not written down in small print you need to ensure there is a paragraph stating that if the military require you (in the event of a war for example) then you will have to leave your post potentially at minimal notice It is also worth ensuring that they have agreed the correct amount of leave a you are paid by the military you are entitled to equivalent leave which essentially amounts to 6 weeks annual leave and 2 weeks study leave

Other departments which necessitate an early visit are Occupational Health and the Information Technology Department A password for the hospital intranet is often vital to access a patient s health record their laboratory results and radiographs

Lastly it is worth getting a copy of the rota and finding out when and where you are starting work The when is important because the start times are often earlier than the UK and may be before 07 00

Children

Travelling a long distance with young children or babies can be taxing Fortunately even a newborn baby will have a booked plane seat in business class which makes things a lot more comfortable Taking a baby on a flight has its own difficulties in terms of carrying a vast amount of equipment which may include a car seat buggy and travel cot Flights to North America only let you take two pieces of hold luggage per person so pack everything in the fewest biggest suitcases you can find and be prepared that you may have to pay an excess baggage fee even though you may be within your baggage weight A nice grovelling letter to INM explaining your situation with accompanying receipts usually gets a refund

Schooling is another important issue which needs sorting out some time before you leave the UK The internet should provide you with lots of information and ask advice from your hospital or other fellows working out there Basically your children are entitled to an equivalent education that they would expect in the UK Other countries in the world however start schooling at different ages which could be an issue if you

have a 5 year old who goes to school in UK but abroad they do not start until age six

It may be impossible to get your children into a state-paid for school leaving private school as the only other option You may be able to claim all or some of these schooling fees back but the situation is complex and needs to be sorted out on an individual basis

Helpful Hints

The biggest nightmare working abroad can be the driving Firstly there are the simple issues of getting used to driving on the other side of the road and operating automatic gears There may be unusual rules of the road like being able to turn right on a red light The country may only accept your international driving licence for a set period of time (e.g. Canada only recognise it for 6 months thereafter you must take their driving test and get a local licence) The BDLS or your admin cell should have given you a letter stating that you and your spouse are exempt from having to obtain a local driving licence

Car insurance can be expensive even with an old second hand car and the insurance companies may not recognise UK proof of no claims to get a discount Telephone and write to your car insurance company telling them that you are moving abroad and ask them for a letter of no claims including the following specific items

- all names of insured persons
  percentage of no-claims discount for each person
  number of no claims years for each person
  the end date of the no claims years
  the start date of the no claims years
  a specific paragraph saying that the above insured persons have not made a claim for the above period

The military will cover all health costs (cosmetic surgery excluded!) incurred during your stay in the country even if you are travelling around However if you leave the country you will need to arrange your own travel insurance to cover all the family You are entitled to free dental treatment but your spouse may have to pay a contribution towards her dental health costs All non-emergency dental treatment in the first and last 3 months of your appointment is not refundable

It is worth remembering that you are entitled to duty free alcohol The issue is complicated but after arrival the BDLS should write a letter to your local government liquor board stating that you are entitled to duty free alcohol The liquor board should write a letter to your home address stating your entitlements and details of how to get the discounted booze It is quite a substantial amount per month (Canada allows 12 bottles of spirits and 24 bottles of wine) Sadly... beer is not on the list

If your spouse decides that they wish to work on arrival in the country it is possible for them to get a working permit Advice should be sort from your BDLS or administration unit

Returning to UK

Once you are in the final six months before returning home it is worth getting the Appointer to issue an OAL with your next appointment and date This will facilitate everything from getting your transport back to the UK and allowing you to apply for a married quarter if appropriate

There are two options for returning home One is to go back the way you came i.e. a business class flight direct to the UK The alternative which is well worth capitalising on is called Making Your Own Passage Approximately three months before you are due to leave your overseas liaison office will tell you the cost of the flights home for all your family If you decide to make your own way back you can use up to that amount (which could be £10 000 for a family of four travelling from a long haul destination) to get back anyway you like From Canada for example you could fly back economy class stopping off at Hawaii Japan Hong Kong and Thailand on route to the UK Another option would be to fly to New York economy class and catch the Queen Mary 2 for a transatlantic crossing to the UK Basically the limit is your imagination and if you exceed the cost the excess comes out of your own pocket The only problem is that you have to pay up front and claim back when you return to the UK

There are similar options for returning unaccompanied baggage Again you could send your cubic metre allowance by airfreight back the way it came If you have exceeded your allowance and/or are bringing back a car or boat then you can use the cost of your airfreight

difficulties to send it back by sea This usually gives you at least four times the cubic metre size with the only downfall being the travelling time of 4-6 weeks

If you rented an unfurnished abode there is the hindrance of checking the inventory of all items bought and advertising them for sale This is further hampered by living in your place presumably up until the day you leave so you will have to have a car boot and garage sale in the final week The other large item to sell will be your car which again you will want to use up until the last week

Acceptance of Experience
Finally you get safely back to blighty in one piece move back into a house buy a car and receive delivery of your unaccompanied baggage It would be nice to end the year there but there are a few loose ends to tie up

Firstly a number of people will want to see a report from you containing your experiences from the year and reports from your hospital stating that you have been a good egg turned up on time and were an asset to the department These people include your Royal College the DFMD your NHS Programme Director and your single and tri service specialty advisors Ultimately you will also have to show these reports at your RITA for them to accept the year as part of your training

Lastly it is polite to give something back to the system by writing up your experiences for inclusion in the Gaffer s Gazette and perhaps present it at the annual Tri Service meeting and maybe a departmental meeting at your hospital If you are feeling particularly keen you can write an update for your Royal College s Overseas Database that will benefit future trainees

Conclusion
With any luck you should return having had a fantastic time in a foreign country visited many beautiful sights and gained an insight into the politics and the running of a different health care system The whole experience especially medical will have broadened your horizons and be of real benefit to you in the future and to the military

APPENDIX A

The Royal College of Anaesthetists

GUIDANCE FOR SPECIALIST REGISTRARS SEEKING APPROVAL FOR OVERSEAS TRAINING EXPERIENCE AS CCST TRAINING

The 5 year SpR anaesthetic training programme allows for up to one year of overseas training to count as part of the final three years of training For trainees to gain College approval for such experience they must be in a substantive SpR training programme have completed SpR years 1 and 2 in their entirety and be eligible for entry to SpR year 3 training This does not preclude the planning and setting up of the post during the SpR 1/2 period

To ensure that such experience is counted as part of a CCST programme prospective approval must be sought from the medical Secretary of the Training Committee prior to taking up the overseas post It is the responsibility of the trainee to submit the following information to the Training Directorate of the Royal College of Anaesthetists

- The name of the hospital
- The name of the Head of Department at the hospital
- The name of the designated supervisor
- Written confirmation from the College Faculty or training board of the relevant country stating that the post is recognised for training
- A full description of the proposed programme
- Information on any research within the training
- A statement of the specific objectives to be achieved
- A letter of support from the Chairman of the Regional Training Committee and/or the Postgraduate Dean in the UK

The Medical Secretary will consider the requests on an individual basis and inform the trainee and their trainers of the decision as soon as possible

On their return to the UK all trainees will be required to submit a written report of their experience in the overseas post supported by an assessment report from their designated supervisor

It is also important for trainees to note that when planning the final three years of training which may include some overseas training that in order to complete a CCST programme the final stages of training **must be completed in the UK**. In order to allow sufficient time to assess satisfactory completion of a CCST programmed the Training Committee requires that trainees should normally complete at least the final six months in the UK. Only in exceptional circumstances would a trainee be allowed to be training out of the UK within the final six months of training. In such cases a minimum of the final three months training must occur in the UK.

APPENDIX B

Important Documentation

Non Medical	Medical
passports	GMC registration
marriage certificate	original medical degree
list of all important phone numbers	work visa
cheque books	current CV
NATO Travel Order	proof of Hepatitis B vaccination
local currency (both cash and a banker's draft in which to open your new bank account)	GMC Certificate of Good Standing
birth certificates	original higher diploma
driving licences	job offer
credit cards	portfolio
address book	
packing list for Unaccompanied Baggage	
criminal records review (disclosure)	

References

1 www.vso.org.uk

2 www.msf.org

3 Movements Royal Navy Overseas Support Unit Orion Block HMS NELSON HM Naval Base Portsmouth Hampshire PO1 3HH (023) 92 724811 dlogsupoocd3@a.dii.mod.uk

4 Relocations Allowances Office Orion Block HMS NELSON HM Naval Base Portsmouth Hampshire PO1 3HH (023) 92 722194

5 Section Water Royal Navy Overseas Support Unit Orion Block HMS NELSON HM Naval Base Portsmouth Hampshire PO1 3HH (023) 92 724644 dlogsupoocd3a@a.dii.mod.uk

6 Passenger Reservations Centre Defence Transport & Movements Agency 4th Floor Hampton House 20 Albert Embankment London SE1 7TD (020) 7218 1463

7 www.sabbaticalhomes.com

8 Office of the Surgeon Commodore Monckton House Institute of Naval Medicine Alverstoke Gosport Hampshire PO12 2DL (023) 92 768001 sec@inm.mod.uk

Surgeon Lieutenant Commander Heames is currently appointed as an Anaesthetic Specialist Registrar to the Institute of Naval Medicine for training at the Department of Anaesthesia Vancouver General Hospital Canada

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Book Reviews

ABC of Eyes, Fourth Edition
P T Shaw P Shah and A R Elkington London BMJ Publishing Group 2004 pp93 ISBN 0 7279 1659 9 Paperback with CD ROM £25-00

This book was pressed into my hands with a firm admonition to review it from the GP perspective. This instruction was obviously taken into account my previous foray into ophthalmology before embarking on GP training. This book is the fourth edition of the text and comes after a five year hiatus with two new chapters and a CD-ROM.

There is no unnecessary preamble or introduction and the book leads you straight in with a clear exposition of the important factors around the successful history and examination of any eye or vision related problem. The information is unequivocal and even manages to clarify field testing (or the "physician's wiggly finger dance" as it used to be described by an ophthalmologist from Sheffield). After the initial flurry of history and examination the book settles down into a more systems and diagnosis based approach to the eye. It is lavishly illustrated with clear photographs and diagrams covering all aspects of the eye and its adnexae. Being clear in its aim and eloquent in its writing the book guides one readily through the major issues that affect the eye (even making the neurology understandable). Two chapters are very useful for the itinerant GP and SHO dealing with the red eye and injuries to the eye. Both conspire to enable the reader to have a degree more confidence in dealing with these (sometimes dramatic) problems and have a lucid approach to enable rapid siting appropriate treatment and disposal.

Two chapters have been extensively updated. Refractive errors have been looked at in depth with a coherent summary of refractive surgery techniques with a very good section on the potential risks of such surgery. Glaucoma has also received an update on latest diagnostic and treatment techniques despite the fact that this applies more to the secondary care side of life rather than the GP wondering what to do with a patient with a family history of glaucoma. This greater depth does not detract though and there is still plenty of guidance for the GP on the disposal of the patient.

There are also two new chapters within this version looking at the problems and issues surrounding age related macular degeneration. It holds a glimmer of hope for those who may suffer from this disease in later life but research is still looking for definitive solutions. A final chapter now looks at the global impact of eye disease and gives a good taster of what can be done to help those in developing countries and what levels of care can realistically be provided.

The CD-ROM is a new addition to the ABC package and could be seen as a touch gimmicky for your average GP. It may well appeal to technophiles as it has a trial chapter in the PDA version of the ABC of Eyes along with a copy of "Mobipocket Reader". Unfortunately you will still have to part with extra cash for the full version for your PDA. The rest of the CD ROM is taken up with a PDF of the book for browsing and searching and a slideshow of all the artwork from the various chapters. BMJ Books has also rather shamelessly included online access to their complete catalogue (along with an order form!).

Overall this is a very clear authoritative and easily assimilated exposition of the basics of clinical ophthalmology. It is obviously aimed at the shores of ophthalmology and has a lot of knowledge to offer GPs, those in A&E and even SHOs just kicking off their ophthalmology career. The authors do occasionally stray into too much detail of the secondary care aspects of ophthalmology but I find that it does whet the appetite to investigate further around the subject and as a trigger for an entry in a reflective log. All in all an excellent continuation of the high standards set by the ABC of Eyes texts. It is a vital addition to any sickbay library or to one's own personal reference section. The CD ROM taking up less space and providing exactly the same information may be useful where space is at a premium.

Duncan G S Blair
Surgeon Commander

Consent in Clinical Practice
Margaret Mayberry with John Mayberry
Oxford Radcliffe Medical Press Ltd 2003
ISBN 1 85775 804 8
Pp 123

Hippocratic tradition advised that telling patients the truth about their illness was not in their best interests Medical teaching has clearly required significant modification for today s clinical practice and consent to treatment is no exception However consternation exists amongst UK surgeons over increasingly elaborate consent forms and the necessity to spend precious time explaining peri operative minutiae to often seemingly bemused patients

This book addresses a perceived demand for more detailed patient information which has arisen out of recent concerns about clinical competence tragedies such as the Bristol Infirmary Inquiry and the emerging prominence of nurse practitioners The content reflects the backgrounds of the authors a nurse and consultant gastroenterologist both holding law degrees with little evidence of recent "front line" clinical experience Most clinicians would be forgiven for skipping over much of the verbose "lawyer-speak" of the first three chapters which deal with ethical concepts competence and the need for information However the essential elements of informed consent voluntariness patient capacity and knowledge emerge with relevant examples from the courts Comparisons of the harm avoidance and "autonomy enhancing models of consent reveal fundamental differences in UK and transatlantic practice and a clear indication that traditional medical paternalism is giving way to patient empowerment through disclosure of information allowing patients to opt in rather than opt out of any proposed procedure

The book becomes more stimulating in chapter 4 and remains so to the end The uncertainty of the Department of Health s position illustrated by its need to produce endless guidelines confusion generated by The Patient s Charter and the nuclear motives of the NHS Litigation Authority provide enlightening reading Add to these the role of the GMC and specialist societies and the section comes to a head with a discussion of the Bristol affair followed by a comparison with the USA and other jurisdictions over patients rights

The [illegible] clinical [illegible] information to give to a particular individual what constitutes significant risk and when does failure to provide detail become negligent It is somewhat reassuring that the Bolam principle of "competent professional opinion seems to be considered robust in law circles However in an increasingly multi-ethnic society clinicians must be fastidious with communication skills information leaflets are recommended and patient questionnaires with examples considered desirable as confirmation of comprehension Endoscopy provides the only attempt in the book to apply science to the consent process revealing in one study that whilst most patients undergoing gastroscopy wished to know of risks greater than 1 in 1000 a significant number of solicitors believed patients should be made aware of risks of less than 1 in 10000

Whilst informed consent is not a legal requirement politicians and doctors now consider it to be required practice and it will not be long before the courts also recognise this Consent in Clinical Practice therefore forms a useful basis for understanding its importance and implementation

Surgeon Commander R J Gny

J Royal Naval Medical Service 2004 90 1 28–31

Historic

Victor Dickins (1838-1915): Naval Surgeon, Barrister, Orientalist and University Administrator

Dr M J Crossley Evans MBE JP BA PhD FSA FGS

One of the men who laid the foundations of the study of Japanese language literature and history in England during the second half of the nineteenth century was Frederick Victor Dickins (1838–1915). His distinguished career can be divided into three parts as a medical apprentice doctor and naval surgeon (1855–1866) as a student of law and barrister in England Japan and Egypt (1868–1882) and as an academic at the Universities of London and Bristol (1882–1901 1910–1915).

He was the son of Thomas Dickins JP of Edgemoor House Broughton Manchester and was educated as Rossall near Fleetwood and in Paris before becoming an apprentice at the Manchester Royal Infirmary at the age of 18. He subsequently qualified as an MRCS in 1859 and the LSA. He was also a medical graduate of the University of London gaining the MB. His obituary in the *Lancet* states that "before qualification [he] served as a medical officer on a steamer to Australia and the voyage so imbued him with a love of the sea that it determined his original choice of career.

The Navy Lists show that on the 13th May 1862 he was appointed additional for disposal as an Assistant Surgeon to the frigate HMS Euryalus on the East Indies and China Station. On his first voyage he visited Japan. He was captivated by the country and its people and began to learn the language. He was already an accomplished linguist and was proficient in many European languages but Japanese soon became his greatest love and he was able to put his off duty and shore leave to good use familiarising himself with the country's customs manners history and literature.

On the 5th January 1863 he was appointed to HMS Coromandel the tender to the flagship on the China Station and divided his time in 1864 between the Euryalus and Coromandel before being appointed to Euryalus for sick quarters at Yokohama in the first part of 1865. Towards the end of the year he was appointed to HMS Princess Royal the flagship on the China Station. He left the Royal Navy's service early in 1866 perhaps on account of his health which was not robust and he turned his back both on medicine and the sea. After a short while involved in business in Manchester he learned that there were openings for English barristers in Japan. As this was the easiest way in which he could return to the country and to continue his studies he became a member of the Middle Temple and was called to the Bar in 1870.

He sailed for Japan late in 1871 and used his linguistic and legal skills in the Japanese and the consular courts founding and editing a newspaper there and making a significant fortune[1]. His leisure hours were spent writing articles for magazines and newspapers and translating and writing commentaries on numerous works of classical Japanese literature including *A Hundred Views of Fuji*, *The Chushingura or Loyal League*, and *The Story of Heda Crafisman*. His collected works running to seven volumes and 3,550 pages were recently republished by Ganesha Publishing (1999)[1]. He also took a great interest in oriental archaeology. The second phase of Dickins's career was interrupted by ill health and he returned to England in 1879 with his wife and three young children. His furlough restored his health and finding England not to his taste he went to Egypt where he practiced at the bar. He had been there for only a short while when the uprising of Arabi Pashe in 1882 led to British intervention and reluctant administration and Dickins decided to return to England.

In the same year he was appointed Assistant Registrar of the University of London serving as

Registrar between 1896 and 1901 during which time he became very familiar with the young University College at Bristol which was one of the satellites of the University of London During his time in London he took an active interest in the Asiatic Society of Japan and was a member of the Athenaeum He also collaborated with Stanley Lane Poole (1854 1931) and wrote the section of *The Life of Sir Harry Parkes* (1894) which dealt with the time that Parkes spent as the ambassador to the Japanese Court It is one of the most detailed accounts of the fall of Shogunate Upon retirement Dickins received the CB in recognition of his distinguished scholarship

Whilst a young man in Japan in the 1860s Dickins forged a life-long friendship with Ernest (later Sir Ernest) Satow (1843 1929) who had joined the Japanese Consular Service as a student interpreter in 1861 and remained in the country until 1884 He later served as Envoy Extraordinary between 1895 and 1900 and laid the foundation to the treaty of alliance between the two countries in 1902 Satow published an English Japanese Dictionary a guide book various papers in the *Transactions of the Asiatic Society of Japan* and books on early 17th century Japanese history The academic and linguistic interests of Dickins and Satow neatly complimented each other and their correspondence and later Satow s correspondence with Dickins s widow and daughter spanning the years 1877 to 1920 is preserved in the Public Record Office[4] Dickins and Satow both travelled together in Japan[5]

After retirement from his post as Registrar Dickins settled in Wiltshire and continued to take an interest in the affairs of the University of London and the various academic societies of which he was a member He continued his academic work and published the texts for which he is particular remembered today *Primitive and Mediaeval Japanese Texts* (1906) and *The Makura Kotoba of Primitive Japanese Verse* (1908) He followed and it is believed supported the movement to transform University College Bristol into something more substantial which gathered momentum following the publication of the paper by Professor M W Travers entitled *A Contribution to the Study of the University Problem setting forth the need for the establishment of a University of Bristol* (Bristol 1906)

When the University of Bristol finally received its Charter from King Edward VII in 1909 it was the last of the so called civic or red brick universities to be authorised to grant its own degrees Although it had been a college of the University of London since 1876 it could lay no claim to being a centre for modern oriental studies as none of its component parts was taught in University College Notwithstanding this omission one of the first academic appointments made by the new University was a Readership in Japanese to Victor Dickins The reasons and the procedures which led to the appointment have been lost but must have involved senior figures at Bristol whom he came to know whilst Registrar of the University of London The first official notice that has survived of his appointment is a statement in the *Annual Report from Council to Court* (1909 1910) in which we are told that Council has instituted the office of Reader for distinguished persons whom it is desired to associate with the University and to invite to give occasional lectures in advanced subjects Readerships as above defined have been made permanent appointments[6] The minutes of the University s Senate have not survived for 1909 1910 but the minutes of Council for the same period confirmed Senate s recommendation of F C Dickins as Reader in Japanese on the 8th July 1910 Subsequently the *University Calendar* for 1910 11 informed its readers that a short course of lectures on the History of Old Japan will be given at a time to be announced by Mr Victor Dickins CB University Reader in Japanese[7] *The Bristol Times and Mirror* for the 19th and the 26th January 1911 published accounts of the first two lectures at some length but made no mention of the third a slide lecture[8] Another short announcement was made in 1911-12 The course advertised was "The Christian Century in Japan" and in 1912 13 1913 14 and 1914 15 there was a short course of lectures on the language and literature of primitive Japan " Some doubt remains as to how many of these lectures were actually delivered Announcing his death which took place on 16th August 1915 at his home Seend Lodge Seend Wiltshire the students University magazine *The Nonesuch* stated that he was not so well known in the University He gave one lecture on Japanese History some time ago ' It has been doubted that Dickins had many students One of Sir Ernest Satow s proteges J H Gubbins held a similar post at Oxford between 1909 and 1913 but was made redundant

for lack of them

It is believed that a few of Dickins's students at Bristol subsequently became missionaries in China and Japan and some interesting transcripts by one of them, a lady missionary in China at the time of the revolution in 1911 2 are now in the University s Special Collections

Following his death the Senate and Council of the University passed a vote of condolence to his relatives[3] and therefter Victor Dickins passes from the history of the University Unfortunately shortly before his death he gave instructions for all his correspondence to be destroyed thus depriving us of a clearer insight into his association with the University of Bristol[4]

After Dickins death although Japanese ceased to be taught at the University the extensive collection of his books and manuscripts found their way into the University Library The acquisition books of the Library prior to the mid 1920s have not survived and it is not now certain how the Dickins collection arrived there[5] There is no mention of them in his will[6] and they may have arrived as a direct gift prior to his death or were the gift of his widow or children

They were consulted from time to time We know that the Revd later Canon Edwin Bridger who studied at the University between 1929 and 1934 used them He was subsequently appointed to the Diocese of Kobe in Japan in 1936[7] and worked in the Goken Yashiki and Himeji[8] Another student of the University who used the Dickins manuscripts was Dr Francis Clifford Jones (1903 1968) He studied history at Bristol between 1921 and 1924 obtained a first and qualified as a school master the following year He subsequently took his MA at Bristol in 1930 which was published as a book in 1931 and reprinted in 1977 entitled *Extraterritoriality in Japan and the diplomatic relations resulting in its abolition in 1853 1899* The subject of extraterritoriality is one in which Dickins had expressed himself forcefully in favour in a leading Japanese newspaper in 1881 Dr Jones subsequently served as a teaching assistant in the department of history between 1925 and 1929 and wrote *Japan* (1933) in a series of books entitled *Modern States* He was appointed a lecturer in Far Eastern History at Bristol in August 1945 and for over 20 years inspired generations of students in the department of history with his enthusiasm and his teaching His post war publications on Japan included *Japan s New Order in East Asia its rise and fall 1937 1945* (OUP 1954) and *Hokkaido its present state of development and future prospects* (OUP 1958)

At the outbreak of war in the East in 1941 a former Bristol student was in the process of shipping his large collection of books and papers from one of the major Japanese seaports to Bristol to add to the Dickins manuscripts in the University Library These were crated on the quay and awaiting shipment but were subsequently impounded Sadly in 1945 their whereabouts could not be ascertained[9]

A student who is believed to have referred to the Dickins manuscripts whilst at Bristol is Dr Trevor Hilliar Berrill (1905 1982) who qualified as a doctor in 1928[4] and after a year at the Mayo Clinic USA travelled to Japan as a ship s doctor in a career which mirrored that of Dickins himself[4]

In the post war period the Dickins collection languished unused in the University Library and during the 1960s and 1990s the more valuable items were sold and returned to Japan leaving behind only a shelf of material which was not deemed of sufficient importance to merit sale This awaits cataloguing and is all that remains to record the five years between 1910 and 1915 that Dickins was associated with the University of Bristol[10]

References

1 For the main biographical details see Who Was Who 1897 1916 (1920) pp 196 197 The Lancet 1 September 1915 p 580

2 Whilst in Japan Dickins played a significant part in a Court case in 1872 which involved the Peruvian ship the Maria Luz which was taking indentured Chinese labourers or coolies from Macao to Peru This case eventually led to the abolition of indentured prostitute in the pleasure quarters of Japan

3 The Collected Works of Frederick Victor Dickins (1959) 1 8670 10 003 9 published at £950 After completing this text I was directed by Dr Nigel Brazier of the Department of History University of Bristol to the comprehensive biography of Dickins written by Dr Peter F Kornicki of the University of Cambridge in Volume 1 pp ix xxxi

4 FRD 70/33 NRA 8656 SATOW These include letters from Sir Ernest Satow to Dickins written between 1877

and 1915 – file 30/33/5/7 and a few from Dickins and Dickins – widow and daughter to Sir Ernest Satow – file 30/33/11/4. I am indebted to Dr Nigel Brailey for this detailed information. An example of their joint scholarship is "Notes on a Visit to Hachijo in 1878" which appeared in the Transactions of the Asiatic Society of Japan (1890).

5 Letter from F.V. Dickins's grandson Douglas to David Satow dated 11 November 1999 – shown to me by Dr Nigel Brailey. D Dickins had then written a book about his grandfather's and his own travels in Asia entitled In Grandpa's Footsteps.

6 The Annual Report from Council to Court (1909-1910) p 13.

7 There are no Senate minutes before the 26 September 1910. The Minutes of Council (1909-1910) p 275.

8 The Calendar of the University of Bristol (1910) p 193 – see also pp 23, 24.

9 The Western Daily Press only mentioned the first of these lectures.

10 Ibid (1911-1912) p 201. Faculty of Arts Prospectus (1911-12) under special courses p 47. The University Calendar (1912-1913) p 211. Ibid (1913-1914) p 215. Ibid (1914-1915) p 235.

11 The Nonesuch No 14 Vol IV December 1915.

12 Information from Dr Nigel Brailey of the Department of History at the University of Bristol.

13 The University of Bristol Minutes of Council July 1915 – July 1916 p 1. The Minutes of Senate July 1915 – July 1916 p 1.

14 Letter from Douglas Dickins to Sir Ernest Satow's great nephew David dated 11th November 1999.

15 Information from Mr M T Richardson Special Collections Librarian University of Bristol.

16 Will Public Record Office dated 8 January 1915 proved 19 October 1915 and valued gross at £20,854 13 9d.

17 Information supplied to me in 1990 whilst Alumni Officer of the University.

18 University of Bristol The Alumni Gazette (1936) p 12. The Church Directory and Almanack (1941) p 115. He was born on 19 August 1909 obtained his BA in Latin Greek History English and Philosophy in 1932 and was registered for an MA in Philosophy between 1932 and 1934. It is possible that Badger was taught history by F C Jones between 1929 and 1930.

19 Canon Badger later settled in Australia.

20 In 1990/1 as a result of a general enquiry the then University Librarian Mr Norman Higham researched the question again but by this time the documentation relating to it had perished. The student in question may have been Canon Badger. It was stated that the University was compensated after the war. M I Crossley Evans "The historical links between Japan and the University of Bristol" a paper read to the Japan Society for the Promotion of Science 27 February 2001. University of Bristol Convocation Yearbook 2002 pp 17-18.

21 The Alumni Gazette (1981-1983) p 13. He was awarded the MBE and distinguished himself in his work with the casualties of the war time air raids in Coventry and Warwick.

22 In the early 1980s tentative suggestions were made to establish a department of Japanese at the University but the loss of the Dickins library and manuscripts made the proposals unattractive and deprived the projected staff of important teaching material. Although Japanese is now taught at the University it is as a subsidiary subject.

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Service News

ROYAL NAVAL MEDICAL AND DENTAL OFFICERS

Academic Achievements brought to the editor's attention

Surgeon Commander S J Parkin
Diploma in Medical Education

Surgeon Lieutenant Commander A Bowie
GFEC Initial Trainers Board

Surgeon Lieutenant Commander M D Brinsden
Primary FRCS(Trauma & Orth)

Surgeon Lieutenant Commander S E T McCabe
Diploma for FRCA

Surgeon Lieutenant Commander E M Knight
MRCGP (with merit)

Surgeon Lieutenant Commander J Carty
MRCGP (with merit)

Surgeon Lieutenant Commander A C Palmer
MRCGP

Surgeon Lieutenant C J Hunter
Diploma in Aviation Medicine

PROMOTIONS

to Surgeon Rear Admiral
P I Raffaelli

to Surgeon Captain
A S Hughes C Pipkin A J Walker

to Surgeon Commander
L B Cannon D J Connor M J Crater S J Leigh
Smith G A Matthews A L Pimpalnerkar R F
Rickard G Wood L M Thomas

to Surgeon Lieutenant
A L Cockrain

to Surgeon Lieutenant Commander (D)
T E Foulger T J Burton

NEW ENTRIES

Cadetships Acting Surgeon Sub Lieutenant A J
Wrigley
Surgeon Sub Lieutenants F E Smith S N Pillai C
J Gibbens J C Watchorn S Jamieson

DIRECT ENTRIES

Surgeon Lieutenant Commander R A Ramaswami
Surgeon Lieutenant N W F Leather
Surgeon Lieutenant Commander (D) M Doherty
Surgeon Lieutenant (D) A Chan

TRANSFER OF COMMISSIONS

to MC(MD)
Surgeon Lieutenant Commander A M Nelstrop
Surgeon Commander R G Thomson
Surgeon Lieutenant Commander
(D) M H Wingfield

to FC(MD)
Surgeon Lieutenant Commander M I Tennant
Surgeon Lieutenant Commander (D) W B O
Chattick

Placed On Retired Or Emergency Lists

Surgeon Commodore G H G McMillan Surgeon
Commander D J Summerton Surgeon
Commander R J Guy Surgeon Lieutenant J R C
Gregory Surgeon Lieutenant (D) S E K Grosse

Prize Winner

Surgeon Lieutenant Commander S Porter was
awarded the Alan Hirst Prize
for endeavour in General Practice

MEDICAL SERVICES OFFICERS

PROMOTIONS

to Captain
R J Holyer S K Jackson

to Commander
R F Keaney T M McAuslin W Durning

to Lieutenant
D A Pickering J A Abey M C Flynn K Macey D S Parker A M Redding F A Klar S M Thornhill

to Sub Lieutenant
J E Fowler V L Robson Heallie

Placed on Retired List
Lieutenant Commander D A Griffiths

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

NEW ENTRIES
M J Kiernan S E Gardner M I Wesson B A White

PROMOTIONS

to Commander
N J Howes

to Lieutenant
C J Ward

TRANSFER OF COMMISSIONS

to MC(MD)
Lieutenant Commanders I J Kennedy D J Knight

to FC(MD)
Lieutenant Commanders V S Ferguson N D Piper ARRC S J Rankin

Placed on Retired List
Commander L J Butcher ARRC Lieutenant Commander N J Broom MBE Lieutenant R W A McFarlane

ROYAL NAVAL RESERVE & QARNNS(R)

PROMOTIONS

To Surgeon Lieutenant A D Drummond

To Surgeon Lieutenant Commander M L Bowen

QARNNS(R)

NEW ENTRY

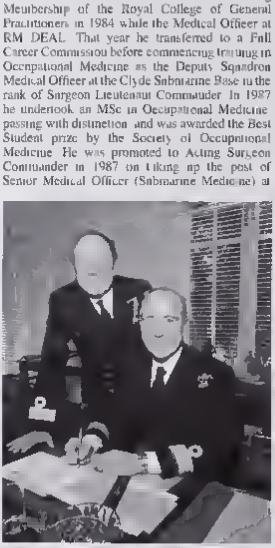
Acting Sub Lieutenant F J Taylor

Retirements & Resignations
Surgeon Lieutenant Commander D M Couper
P/Surgeon Lieutenant Commander A G Gilbey
P/Surgeon Sub Lieutenant R A Rennie

QARNNS(R)
Lieutenant Commander L I Minter

SURGEON REAR ADMIRAL P J RAFFAELLI BSc MSc MBChB MRCGP FFOM

Surgeon Rear Admiral Raffaelli joined the Navy as a Medical Cadet in 1976 while a medical student at Edinburgh University. He graduated in 1979 and began his Short Service Commission in 1980. After initial training he joined the Submarine Service in 1981. His first appointment was as the Medical Officer for HMS RENOWN (Sibd) in 1981-82. On completion he started vocational training in General Practice at RH HASLAR before attaining Membership of the Royal College of General Practitioners in 1984 while the Medical Officer at RM DEAL. That year he transferred to a Full Career Commission before commencing training in Occupational Medicine as the Deputy Squadron Medical Officer at the Clyde Submarine Base in the rank of Surgeon Lieutenant Commander. In 1987 he undertook an MSc in Occupational Medicine passing with distinction and was awarded the Best Student prize by the Society of Occupational Medicine. He was promoted to Acting Surgeon Commander in 1987 on taking up the post of Senior Medical Officer (Submarine Medicine) at



Surgeon Rear Admiral P J Raffaelli FFOM Royal Navy, Commodore J Reed OBE Royal Navy, Medical Officer in Charge Institute of Naval Medicine

INM in 1987 and was awarded the Membership of the Faculty Occupational Medicine and accredited as a Consultant in 1989. In 1990 he undertook the Nuclear Radiation Protection Course at RNC GREENWICH for which he was awarded the Herbert Lott Award and passed with distinction. That year he also received the Errol-Eldridge Award for his contribution to research into submarine escape and rescue. He joined HMS NEPTUNE as the PMO in 1990. His next appointment was as the Naval Medical Officer of Health (Portsmouth) in 1993 before being appointed as the Submarine Flotilla Medical Officer as an Acting Surgeon Captain in 1994. He attended the Joint Service Defence College Course in 1995 for which he was awarded the Best Student Prize. He was then appointed to the Ministry of Defence under ACDS(L) as MedOP2(NATO) and as the Professor of Naval Occupational Medicine (PNOM). During this appointment the department transferred to Northwood as part of JHQ and JFHQ. In April 1998 he was appointed to SGD in MOD as SO1(NATO) and was promoted Surgeon Captain in December 1998. He was then appointed Director of Health (Navy) in March 1999. He attended RCDS in 2003 and was appointed to his current post as MOIC INM in the rank of Surgeon Commodore on 16 December 2003.

He was then appointed as the Chief Executive DMETA in the rank of Surgeon Rear Admiral on 1 May 2004.

He was awarded the Fellowship of the Faculty of Occupational Medicine in 1997 and has been actively involved in the Faculty's postgraduate examinations for some years and has been the Chief Examiner and a member of the Academic Committee since May 2001.

Surgeon Rear Admiral Raffaelli is married to Sue, has two adult children and lives in Lee-on-the-Solent in Hampshire. He has a wide range of interests including music, sport, reading, gardening and cooking.

MEDICAL OFFICER-IN-CHARGE INSTITUTE OF NAVAL MEDICINE COMMODORE F REED OBE OSLJ BA MSc ROYAL NAVY

Commodore Frank Reed was born in Edington Wiltshire in 1951 and educated at Trowbridge Boys High School He joined the Royal Navy in October 1967 as a Junior Probationary Medical Technician Following initial Medical Assistant training he went to sea in HMS Diana returning to RNH Haslar in 1969 to undertake Physiotherapy training After qualifying as a Chartered Physiotherapist he served in RNH Plymouth and HMS Ajax being advanced to Petty Officer in 1975 and promoted to Chief Petty Officer in 1977 Following the BRNC Dartmouth and Royal Naval College Greenwich SD Officers Courses he was commissioned as a Medical Services Officer in May 1977

After commissioning Commodore Reed served in HMS Cochrane as the Medical Administrative Officer until 1980 when he returned to Haslar as the Rehabilitation Officer During his time in Haslar he gained an Open University BA in Psychology and an MSc in Rehabilitation Medicine from Southampton University He was appointed Serving Brother of the Order of St John for his rehabilitation work in 1985 Following the Lieutenants Greenwich Course in 1985 he worked on the staff of Commodore Amphibious Warfare returning to Greenwich in 1988 he completed the RN Staff Course

Following staff appointments in the Defence Medical Services Directorate MOD and as Secretary to Surgeon Rear Admiral (Operational Medical Services) he was promoted to Commander in October 1993 Staff appointments as a Commander have included branch manager in the Directorate of Naval Manning and as the operational desk officer in the Surgeon General s Department MOD He was re-appointed to the Surgeon General s staff as Assistant Director Medical Programmes in April 1998 with responsibility for the policy and procurement of operational medical equipment and the Defence Medical Services Information Strategy He was the first Medical Services Officer to be promoted to the rank of Captain and was appointed Deputy Commander Defence Medical Services Training Centre in November 1999 In December 2001 he took over as Commandant DMSTC and was also briefly the Chief Executive of DMTO Following promotion to Commodore in June 2002 he was reappointed as Commandant DMSTC Commodore Reed has held the additional responsibility as Head of the RN Medical Services Branch since 1996 He was awarded an OBE in the Queens Birthday Honours List 2002 From December 2003 he has been employed in the MoD leading Manpower Strategy and Medical Training Projects and took over as MOIC INM on 26 April 2004

Commodore Reed lives in the highest house in Cornwall on Caradon Hill north of Liskeard with his wife Elizabeth they have three grown up sons His interests are walking keeping an old house habitable learning to play golf and horse riding

A DENTAL HYGIENIST'S PERSPECTIVE

I followed my brother into the Royal Navy in 1991 at the age of seventeen after a brief spell as a painter and decorator and to be totally honest I didn't even know there was a Royal Naval Dental Service. I had absolutely no intention of pursuing a career in health care and indeed during my first six years of service in the Royal Navy I was a Tactical Systems Operator on Trafalgar Class nuclear submarines. During this period I served on HMS TRENCHANT and HMS TUBULENT and managed to top up my suntan in various places such as the United States, Hong Kong, Guam, South Korea and under the North Pole!!

One of the great benefits of a career in the Royal Navy is the opportunity to retrain whilst still in service. After six years in the submarine service I realised it wasn't for me and to cut a long story short, I joined the Royal Naval Dental Service as a Dental Surgery Assistant. As you can probably guess submariner to dental surgery assistant is not a normal Navy career path!

In the Armed Forces there are two ways of becoming a military dental hygienist. One route is via direct entry as a qualified dental hygienist with the Diploma in Dental Hygiene or as a transferee from the dental surgery assistant branch. Transferees undergo an interview procedure to assess their suitability to become a dental hygienist student. Military dental hygiene students undergo their training at The School of Dental Hygiene in Aldershot. So not satisfied with a career as a painter and decorator, a submariner and then a dental nurse and attempting to create the strangest CV ever, I started my dental hygienist training in 1999.

Dental hygienist training at Aldershot was an extremely challenging experience although unlike my civilian colleagues military dental hygiene students are paid throughout their training. My two years at Aldershot were life changing, because not only did I gain my Diploma in Dental Hygiene I also met my wife Victoria who was a Royal Air Force dental hygiene student.

I've now been qualified for three years and worked at two main dental departments. Firstly the Commando Training Centre Royal Marines (CTCRM) based near Lympstone Devon. This is the home of the Royal Navy's amphibious infantry. Whilst there I treated new recruits and training staff alike and also gave regular oral health presentations. From CTCRM I also visited the Commando Logistics Regiment at Barnstaple North Devon and Britannia Royal Naval College Dartmouth South Devon and I enjoyed the opportunity to treat service personnel and their families in Naples Italy. I'm currently based in HMS DRAKE in Plymouth. HMS DRAKE is part of Her Majesty's Naval Base Devonport the largest base in Western Europe. This is the home of the many warships and submarines which form the Devonport Flotilla. My primary role at HMS DRAKE is working in my surgery as a dental hygienist however I often find myself carrying out other roles such as practice management, conducting staff training and appraisals, organising adventure training or oral health promotion and acting as duty dental nurse for all the military personnel in the South West.

As a dental hygienist in the Royal Navy you gain promotion according to your performance and ability to pass certain exams. Once these are under your belt you must also pass command courses for each promotion. These courses develop, stretch and test your communication, management and fitness levels. These courses involve various activities many of which result in being neck-deep in mud, cold or wet but usually a combination of all three! Activities I've undertaken on these courses include trekking on the Brecon Beacons and Salisbury Plain, assault courses, disaster exercises and various other team and individual tests. It all sounds a bit grim but with a sense of humour and the feeling of achievement on completion it's worth it and so is the pay rise! As you achieve promotion in the Royal Navy different jobs become available to you such as teaching or administrative roles within the training and management of military dental personnel.

There are some fundamental differences when you compare civilian and military dental practices. Military patients generally tend to be fit and healthy with unremarkable medical histories. We only treat service families if they are stationed abroad on foreign drafts such as Gibraltar or Naples, so treating children or the elderly can be quite a rare event. Service personnel receive dental treatment as part of the terms and conditions of military service.

therefore there is no exchange of money for any aspect of dental care. One luxury we also have is the freedom within reason to spend more time with our patients in the dental chair.

As one of the fifteen dental hygienists in the Royal Navy we play an essential role in the oral health care of our service. Therefore along with the dental team we attempt to reduce the chances of dental morbidity while military personnel are in conflict on operations in training and during peace time.

I've been extremely lucky to train as a dental hygienist in the Royal Navy. It has provided an excellent environment in which to train and work. Have a diverse career path and good rates of pay and pension benefits has made my career so far a rewarding and challenging experience.

Dean Hunt
Petty Officer Dental Hygienist

ALL ARMS COMMANDO COURSE 5 JANUARY TO 5 MARCH 2004

I joined the Royal Navy in 1997 and since then I had always fancied a crack at the All Arms Commando Course (AACC). One way or another it never quite happened due to professional commitments and the fact that it wasn't clear whether or not it was an operational requirement or a desirability for nurses to undertake Commando training.

Being part of Queen Alexandra's Royal Naval Nursing Service (QARNNS) has provided many people with great professional and operational opportunities. My operational role is as part of the Commando Forward Surgical Group (CFSG) which provide medical support to 3 Commando Brigade Royal Marines. The pinnacle of my operational experience came about during Op TELIC when as an Accident and Emergency Nurse I was part of a Med Section providing immediate care and resuscitation to battlefield casualties. Due to the nature of the initial phases of the war it was deemed necessary to move Med Sections forward to augment Commando unit Regimental Aid Posts at Role 1. I therefore found myself like a handful of other QARNNS members using my skills and experience just behind the frontline one hour into the start of the war in support of 40 Commando Royal marines in the Al Faw peninsula in Southern Iraq. 40 Commando in conjunction with the American Navy Seals were the first troops on the ground which marked the start of the war.

After this experience it became too apparent to me that Commando training would be a highly desirable skill to obtain if I was ever required again to run out the back of a Chinook helicopter into a defensive arc carrying an A2 rifle, 300 rounds and medical kit.

At the tail end of my time in Iraq and on return to the UK, I concentrated on improving my physical fitness and also realised that the first stage in obtaining a place on AACC was to actually complete the application form and place it on the boss's desk. I was soon given a place on course for January 2004 nice weather! This gave me a few more months to improve my physical endurance and strength and I achieved this by lots of middle distance running with weight, around Plymouth and Dartmoor, climbing ropes at the gym, pull-ups in my kitchen doorway and tagging onto various combat fitness tests run at Bickleigh barracks with 42 Commando. I am sure you will agree that this involved a high level of motivation and determination, especially when working night duty over Christmas and New Year.

I commenced Commando training at J week, a pre-course week designed to improve and assess your battlefield fitness and allows time to complete any administration before the course starts. The course itself involved a rapid succession of physical training, military skill learnt on exercise and endurance that grew longer and intensified as the course progressed. This was in preparation for a final week long exercise followed by the infamous Commando tests. The first test comprises of in endurance course which involves a 2 mile circuit of running and crawling through tunnels and water on Woodbury Common, a 4-mile run back to camp and then firing ten rounds at a target on a 25 metre range with time penalties for poor shooting. The second test is a nine-mile speed march conducted on local roads and the third test is the Tarzan assault course which is a series of high wire obstacles, assault course and 30 ft wall climb all to be completed in less than 13 minutes. The fourth and final test involves a speed march up and down 30 miles of Dartmoor National Park in less than 8 hours. All of these tests are completed carrying assault webbing weighing 21 lb and a rifle and are completed over a five-day period straight after a week long arduous exercise with very little sleep. Successful completion of the course allows you to wear the coveted Green Beret.

On the whole I enjoyed the course as it often pushed the realms of physical and mental ability close to their limits. My military awareness and ability have been greatly enhanced and I now have a benchmark to work to. I learnt a lot about myself, specifically that I can achieve more physically and mentally than I thought I was able to. It just shows that if you put your mind to something you can achieve it, with a little determination, courage, cheerfulness in adversity and teamwork, the four components of the Commando Spirit.

The other thing I learnt was that "Don't worry Sir only one hill left to go" actually means that there is still a very long way to go and it is all up a very steep hill!

Karl Hurley
LI QARNNS

REPORT ON A MEETING OF THE DDA ARMED FORCES GROUP OF THE BRITISH DENTAL ASSOCIATION 21 MAY 2004

The annual meeting of the BDA AFG is normally held at BDA HQ in Wimpole Street and includes the AGM of the AFG a section on DDA issues and a clinical element The venue of the Joint Services Command and Staff College (JSCSC) at Shrivenham was chosen this year for the first time as it enabled the incorporation of a formal DDA dinner

The superb facilities at the JSCSC made for an excellent meeting with most attendees being accommodated overnight A number of retired officers also attended

The morning session comprised the AFG AGM and presentations by three vocational dental practitioners (VDP) with awarding of prizes for the best VDP projects Then an update by Major General John Gamon CBE QHDS CE DDA on current issues in particular the forthcoming review of agency status

The [illegible] overview of period in [illegible] by Dr Eric Geidrys Leeper which was very well received Concise informative and entertaining

The break before the evening s proceedings allowed time to view the JSCSC building with the wide range of interesting military artefacts and the superb library

Pre-dinner drinks were taken in the main atrium and the formal dinner was to a very high standard with musical accompaniment by a group from the band of the Hussars and Light Dragoons

The guest speaker was Dr Stephen Hancocks OBE He is a dentist with a high profile in many aspects of the promotion of dentistry and gave a humorous slant on life in dental practice The after dinner socialising was prolonged and engendered tri service camaraderie (if I remember correctly) An excellent day

Surgeon Captain (D) L Thomas
Royal Navy

Directors Lunch

Surg Cdre(D) Ted Grant Surg R/Adm(D) Frank Mathias Surg Cdre(D) Brian Robinson Surg Cdre(D) John Hargraves Surg Cdre(D) Timothy Hall
Surg R/Adm(D) David Coppock Surg Cdre(D)Geoff Myers Surg R/Adm(D) Ted Cadman

On 18 May DNDS hosted a lunch in HMS NELSON for the recent past Directors He sought their collective wisdom about organisational change The reported recurrent analogy of crocodiles and canoes was all too familiar to them all

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Obituaries

Commander (MS) Malcolm George Harper OBE Royal Navy Rtd

Malcolm George Harper was born at Lowestoft in Suffolk in 1932 His father was a fisherman At the age of 7 he was evacuated to Stamford in Rutland and attended the local grammar school On return to Lowestoft after the war he completed his secondary education at the Lowestoft Grammar School

On leaving school he trained as an apprentice pharmacist in Norwich but was unable to afford to go to university to complete the academic part of his pharmaceutical training As a result he joined the Royal Navy in 1950 as a Medical Laboratory Technician which gave him his first introduction to Portsmouth and Gosport although he spent the first nine years of his naval service working at the Royal Naval Hospital Chatham and at sea

In 1959 he transferred to the nuclear submarine programme and returned to Portsmouth He was proud to have been a member of the crew of HMS Dreadnought Britain s first nuclear powered submarine In fact he met his future wife Beryl at the commissioning of HMS Dreadnought in Barrow in 1963 After serving 21 years in the submarine programme he transferred to hospital administration and served at the Royal Naval Hospitals at Haslar and Gibraltar During this period he completed a Master of Arts Degree in Health Service Management at Brunel University Promoted to Commander (MS) in 1978 he became Head of the MS Branch in 1981

He retired from the Royal Navy in 1984 after completing 34 years service He was awarded the OBE and the Order of St John of Jerusalem in 1984

After leaving the Royal Navy he worked for the North West Thames Regional Health Authority for 5 years as Regional Estates Manager before returning to Fareham to work as Director of Administration for Coffin Mew and Clover He retired from full time employment in 1997

Malcolm was invested as Fareham s first and only Honorary Alderman in July 2003 in recognition of his eminent services to the Council from 1987 to 2002 He was

• A member of the Fareham Borough Council for 15 years

• Mayor of Fareham during which time he raised £33,000 for good causes still an unbeaten record This included raising sponsorship for him to abseil down the side of the 10 storey Civic Offices in his regalia

• Chairman of the Leisure and Housing Committees

• My predecessor as Leader of the Conservative Group

Furthermore the Council has taken the decision to further honour Malcolm by naming a road in the new Market Quay development Harper Way

Malcolm passed away peacefully after a long and bravely borne illness on 9 Mar 2004

Our sympathies go to Beryl their four children and five grandchildren

Obituary garnered from the eulogy given at his funeral by the Executive Leader of Fareham Borough Council Councillor Sean Woodward

---

Surgeon Commander (D) George Geoffrey Salmon Royal Navy

Geoff Salmon passed away on 28 September 2003 While I made only passing acquaintance with Geoff at the end of his naval career he was a fine shipmate and confidant for his juniors

Born in Bradford on 21 May 1935 Geoff was educated at Heaton Church School and Bradford Grammar School He then entered Leeds Dental School where he gained both BDS and LDS RCS before undertaking a house appointment prior to joining the Royal Navy in October 1958

He held formative appointments in Victory Barracks HMS SEAHAWK and St Angelo s Hospital Malta before transferring to the Permanent List in March 1961 coincidentally the year he married Margaret who provided colossal support during his career Promoted Lieutenant Commander in April 1963 Geoff spent a significant part of his career in the west country with appointments to RALEIGH FISGARD THUNDERER DRAKE and HERON Consistently reported on as a very productive and conscientious dental surgeon he

was also an affable officer who contributed significantly to wardroom life and the broader navy community He was a noted churchgoer and chorister who shared his talents widely Selected for promotion to Surgeon Commander in 1970 Geoff held senior appointments in HMS PEMBROKE Deal and HQ Commando Forces before being exposed to further staff responsibilities as Staff Dental Surgeon to MGRM His final senior dental surgeon appointments were to DRAKE and SEAHAWK He was reportedly on top of his job an effective leader able administrator and excellent head of department who ensured that patients received timely care in an atmosphere of brisk efficiency Today s cohort of senior dental surgeons would be delighted to hear those plaudits that remain just as important in career progression and might ask why then did he leave the Service prematurely

Geoff was essentially a family man who balanced his career with the various challenges of sharing responsibility for a severely handicapped son In 1983 revised defence planning assumptions and a concurrent draw down in the size of the Navy offered early retirement at an opportune time as it was becoming increasingly difficult for the family to care for Timothy in the adult community Geoff s retirement was all too busy and all too short but he conducted it in much the same unassuming and undemanding way that he conducted his career

To his widow Margaret and to Timothy Geoff s friends and colleagues will wish to extend their deepest sympathy

Surgeon Commander (D) M R C Gall

Surgeon Rear Admiral (D) John Hunter

Surgeon Rear Admiral (D) John Hunter died on 1st April 2004 aged 88 He was Director of Naval Dental Services during the period 1971 1974

John Hunter trained at the Turner Dental School–Manchester–qualifying in 1939 At the time of his graduation he had seriously considered the possibility of reading law but the onset of WWII was to preclude this option In December 1940 he was commissioned as a Probationary Temporary Surgeon Lieutenant (D RNVR and joined the Service at the Royal Naval Barracks Devonport for his induction training A picture taken at that time shows the newl entered Hunter sporting a full set a feature the was to remain with him throughout life althoug at that time this physiognomy was jet blac rather than the white beard which most of u remember

He had a memorable war career serving wit the 2nd Cruiser Squadron Combined Operation and the Pacific Fleet He was appointed to th light cruiser HMS KENYA in January 194 based at Scapa Flow and took part in the hunt fo the BISMARCK

During March to May KENYA was involve in supplying a covering force for convoys in th Arctic In June she transferred to th Mediterranean area and throughout the summ escorted convoys from Gibraltar to Malta at th time when the Royal and Merchant Navie sustained some of their heaviest losses KENY herself was damaged by torpedoes in Augus From 1943 to 1945 John served variously i HMS EXCELLENT RNB Portsmouth HM QUEBEC and HMS NEWCASTLE

In 1946 Acting Surg Lt Cdr Hunter got h "straight stripes" and in the same year whil serving in the battleship HMS HOWE met h future wife Anne on the quarterdeck during wardroom cocktail party whilst on a visit Portland After their marriage in 1947 the bought Horsewells and set up base in the We Country This lovely house at Newton Ferrers o the Yealm Estuary remained their home for th rest of John s life and it was here that they raise their five children

John Hunter cut an imposing figure On casu acquaintance he could appear quite daunting his juniors and even some of his contemporari but there were very different facets to h character which became apparent when h stepped outside the most familiar role of nav officer In his capacity as yachtsman count gentleman or parent many different qualit emerged Those of us who were privileged witness these other aspects saw a man of dee kindness and friendly disposition He was gifted nautical instructor highly knowledgeab about his local natural environment and not lea a devoted father

Surgeon Rear Admiral (D) John Hunt

He was internally [illegible] Junior dental [illegible] dealing with him we expected to meet standards of dress which did at least reflect credit upon their Senior Dental Surgeon and he could be somewhat hard on those who did not fit the accepted mould when wearing hives He was not however totally infallible in this respect A rare lapse occurred at the end of a yacht race when changing out of wet weather gear prior to taking his crew ashore to the Royal Cornwall Yacht Club The skipper had failed to pack a tie As house rules demanded at least a jacket and neckerchief a dilemma presented Without batting an eyelid John scanned his crew selected his mark and divested the victim of his neck ware before donning it himself If the choice looked somewhat incongruous with his reefer it did at least satisfy club requirements The unfortunate junior officer was thus prevented from enjoying a well-deserved run ashore and the skipper s generosity although I recall some recompense being made on the crew s return

An enthusiastic yachtsman he started racing as soon as the sport revived after the War He and Anne owned several cruiser/racers over the years nearly all named TILLY WHIM He was a member of the Royal Ocean Racing Club and was particularly proud of having won his class in the RORC Plymouth to Santander and Santander to Belle Isle races of 1952 Throughout the sixties and seventies John performed well in the Channel and West Country coastal racing He continued to sail into his mid seventies until ill health forced him to quit However the last Tilly still sits on the family mooring below the Yealm Hotel

He was a very sound and well liked clinician who worked hard and expected similar efforts from his subordinates As a Surgeon Commander he served as SDS of the Admiralty Dental Clinic then based at Queen Anne Mansions off St James Park but he will perhaps be remembered for his wide administrative knowledge and as Director for the sure way in which he guided the future of the Dental Services through a difficult period of Government inquiries and financial restrictions Nothing changes! He honed his managerial skills in a wide variety of appointments the first of which was as Assistant to the Director Naval Dental Services Following his promotion to Surgeon Captain (D) in December 1963 he held variously the appointments of Fleet Dental Surgeon on the Staff of CinC Mediterranean Command Dental Surgeon on the Staff of CinC Plymouth and Fleet Dental Surgeon on the Staff of CinC Fleet before his final promotion to Rear Admiral and appointment as Director in August 1971

Above all he will be recalled for the emphasis he placed on the need for continuing postgraduate training for non specialist dental officers in addition to those of the specialist cadre The introduction during his tenure of MSc courses for the "general duties" dental officers opened up a pathway which not only raised clinical standards but led to a fundamental increase of activity in all aspects of clinical training

Together with his predecessor Admiral Forrest he established the Harvey-Fletcher Memorial Prize for dental officers who had contributed to the improvement of their branch either through research or operational activities.

After retirement he continued to cruise extensively from his West Country base He and Anne could now devote more time to their house and gardens which they extended to a considerable acreage His administrative skills were now channelled into local government and he served for some time as a District Councillor for the South Hams

He was appointed OBE in 1962 CB in 197[illegible] and held the appointment of Honorary Dental Surgeon to the Queen during his term as Director

Surgeon Commander (D) M R C Gall

Notice has been received of the deaths of Surgeon Rear Admiral A O Connor LVO Surgeon Commander A A Russell and Dr George Hayes Royal Naval Reserve Our condolences go to their families and friends
The editor would welcome any words of memory of them

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The title page should contain a concise informative title up to five key words the names and initials of all authors and their appointments and the department(s)/institution(s)/ship(s)/establishment(s) where the work was carried out

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Tables and illustrations (figures) should add to the paper rather than only repeating information presented in the text Each table and illustration should be on an individual page separate from the text be numbered in two distinct sequences in the order in which they are mentioned in the text and have an explanatory caption (typed on a separate sheet for illustrations)

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Editorial

Welcome to the second edition of the Journal for 2004. We are [illegible] the editions [illegible] Lynch and I thank you all for your continued interest and support. [illegible] being submitted but more are still needed so please keep your pens etc moving. The sub[illegible] is increasing and we have secured additional income from advertising. The trend is [illegible] in the right direction. However whilst optimism is there we are not out of the woods yet. my plea for volunteers to take some of the not insignificant work from already overloaded desks has not yet met with a queue of volunteers at the White House door. The plea is still there if we are to sustain a regular on time and quality Journal additional help will be needed.

It was interesting to read in the 3 July edition of the Lancet that changes to design content and access had been deemed necessary to keep pace with the evolving needs of the readers and to rethink what it meant to produce an electronic version. The most obvious change was the design and professional journal designers had been engaged for this. In terms of content editorials and comments had been strengthened as had more focussed world news and upgrading book and media reviews. The central axis for the Lancet remains as primary research with publishing priorities and the fast tracking system remaining the same. There is however significant improvement in the peer review process planned during the next six months. During the next twelve months on line users of thelancet.com will also see substantial changes which will be announced shortly. In addition to all the above much effort has been directed to making the Lancet's content openly and freely accessible by encouraging authors to post electronic documents of their peer reviewed and edited papers on personal web sites and in institutional archive repositories. These sentiments are reinforced by Richard Smith the recently retired editor of the BMJ in his editorial at the end of July.

Although confessing to be an IT ignoramus who doesn't actually know what a pdf file is or the difference between MS DOS and domestos it is clear even to me that our Journal must take note of these type of developments for the future. I believe the layout design needs little change even if it did we could not afford professionals to do it, we have addressed the content but would welcome comment on what further content changes the readership may wish. The newly recreated Letters to the Editor section is for this purpose. Additionally we need to give proper and informed thought to the peer review process and even deeper thought to accessibility and the use of electronic and web based versions. Again your comments are encouraged and will be welcomed.

This edition is based around a Trauma theme with I believe papers and articles of both clinical and organisational interest. In addition the First Sea Lord's and Medical Director General (Naval)'s blood red dinner speeches have been reproduced and these give very good updates on current issues. My thanks to all contributors and reviewers keep it up. Finally the next editions theme is Sports Medicine and we are aiming to produce it by January 2005 articles papers etc are needed.

Frank Reed

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Trauma

Receiving Mass Casualties at Sea: The capabilities of the Primary Casualty Receiving Facility

Surgeon Commander G W L Evans, RN
Consultant Adviser in Accident & Emergency to MDG(N)

ABSTRACT

Exercise Arrora (May June 2004) off the eastern coast aboard of the United States provided an opportunity on several occasions to test the ability of the PCRF to cope with large numbers of casualties arriving simultaneously This article reviews the role of the PCRF its facilities and capabilities and how those are currently utilised to handle mass casualties Some of the valuable lessons identified from Exercise Arrora are briefly discussed

INTRODUCTION

In 1990 prior to the First Gulf War a Primary Casualty Receiving Facility (PCRF) was established on board RFA Argus This facility has been continuously developed and improved since then Currently it can function as a 25 bed facility (for initial transit or exercise purposes) or 50 or 100 beds (full operational role) During war the main role of RFA Argus is to support this function and thus become the Primary Casualty Receiving Ship (PCRS)

The PCRS does not comply with Geneva Convention and International Red Cross requirements for designation as a Hospital Ship since she may be fitted with self defence guns or have operational units embarked (Ref 1) but this has the advantage of allowing her to deploy to the combat area (Ref 2) thus reducing transfer times from point of wounding to definitive care

The PCRS can function at either Role 3 receiving casualties directly from Pre Hospital care facilities at Roles 1 and 2) or at Role 4 receiving transfers of patients from shore based Field Hospitals for more definitive care or as part of the "Evacuation Chain" During the 2003 Iraq conflict the PCRS functioned in both roles and her work during that conflict was described in this Journal recently (Ref 3)

In May 2004 the PCRF deployed as a 25 bed facility during Exercise Arrora mainly to provide "safeguard" medical cover for Royal Navy and Royal Marines personnel participating in the Exercise This also allowed the PCRF personnel to rehearse receiving large numbers of mock casualties from the exercise testing triage and casualty handling procedures to the limit Lessons learned in this way are being incorporated into the PCRF Standard Operating Proceedures (SOPs) and are reviewed in this article

CAPABILITIES OF THE PCRF

Staffing levels in the PCRF vary according to whether the facility is deployed at 25 bed 50 bed or 100 bed level ("PCRF25 PCRF50 or PCRF100) However even at PCRF25 the capacity to receive significant numbers of critically injured patients is maintained

The Casualty Reception Area (Figure 1) has four Resuscitation Bays (with space and equipment for a fifth bay at need) and is staffed

Figure 1

by experienced [illegible] range of [illegible] complexes [illegible] Resuscitation [illegible] the staff [illegible] bulkhead [illegible] contains a [illegible] Hangar Lift [illegible] transferred easily from the Hangar [illegible] to allow access into Intensive Care [illegible] patient beds [illegible] or infusion [illegible] either [illegible] planned rearward evacuation [illegible] emergency lift is provided [illegible] During Exercise Aurora) The Intensive Care [illegible] Operating Theatres Recovery Area CT cannot and X ray Department [illegible] It is sited on the same deck as and directly adjacent to the Casualty Receiving Area This is all designed to facilitate of key [illegible] greatly enhances the efficiency of the facility in handling Mass Casualties

The Intensive Care Unit has eight beds (but which not all would be staffed at PCRF25 In the Mass Casualty scenario (Masical exercise in real "Masical incident) current SOPs allow for the use of ITU spaces as additional Resuscitation Bays Some of the most seriously injured casualties (Triage Category P1 see below) can be moved directly to ITU from the Hangar Lift The close proximity of ITU to the Casualty Reception Area facilitates mutual support between the A&E doctors Intensive Care Specialists and the senior Nursing Staff of both areas

One deck up from the Casualty Reception Area accessed by external ramp from the Hangar Lift space or by stairs and patient lift within the PCRF complex are the Wards consisting of a High Dependency Unit (HDU) and 2 General Wards Obviously the number of trolley beds in each varies between PCRF25 PCRF50 and PCRF100 The key principle is flexibility If PCRF25 staff can be re deployed from the General Wards to the HDU during Masical situations This is essential since in any Masical scenario the least seriously injured (P3 patients) will be diverted away from the Casualty Reception Area at Triage to be re assessed on the Wards The Casualty Reception Area can take 5 P1 (or P2) casualties ITU can potentially accommodate a further 4 or 5 (8 if the ITU is fully staffed and was empty prior to Masical declaration) If the combined number of P1/P2 casualties exceeds 10 then the less serious P3 casualties are transferred to the HDU If there are more than 10 P1 Casualties the same P1 patients will go to HDU but at this stage the facility risks being overwhelmed and the Senior Officer must employ the principles of Military Triage ruthlessly (Ref 4) The critical role of the Triage Officer in handling Masical situations is discussed further below

The fact that the HDU may need to receive P1 or even P1 casualties directly from Triage (on Masical situation) has implications for the training of Medical and Nursing Staff deployed to this area of the PCRF and these are discussed below

One deck above the Wards the topmost deck of the PCRF complex comprises a secondary operating theatre Administration Area (from which the Masical response is co-ordinated Pharmacy Stores and Laboratory/Blood Bank facilities The latter not only provides commendably rapid cross matching facility but also an ever increasing range of laboratory investigations to support clinical decisions

ARRIVAL TRIAGE, RESUSCITATION and DEFINITIVE CARE - the "PATIENT JOURNEY"

Reception on Flight Deck

RFA Argus has vehicle access to her hangar deck so when berthed alongside she can receive patients brought by Field Ambulance She is also capable of receiving patients by burt transfer from other ships but this method was used to receive some of the 30 real casualties managed in the PCRF during Exercise Aurora However the

Figure 2

article is concerned with the handling of Mass Casualties at sea Even if the casualties have been sustained in other vessels tactical considerations and the need for rapid evacuation are likely to preclude boat transfer By far the most likely scenario is that casualties will be received by helicopter The Flight Deck is large (Figure 2) and can accommodate a Chinook helicopter carrying 20 patients or several smaller helicopters landing in quick succession of the fact that all casualties have to come by helicopter via the Flight Deck and Hangar Lift produces several important differences between the Mascal procedures in RFA Argus and those which apply in land based facilities

It is more likely that patients received by the PCRF will have had formal triage before flying, since spaces in the available helicopters will need to be allocated on the basis of need (or in the case of large numbers of Military casualties according to accepted principles of Military triage) The PCRF should receive greater warning of the numbers and severity of expected casualties than would be the case in a Field Hospital Even if tactical priorities preclude the transmission of detailed information from forward facilities Flight Safety requires that the inbound helicopter(s) warn the ship of their impending arrival During Exercise Aurora it was agreed that a Mascal situation can be declared by the PCRF Duty Admin Officer on receipt of such warnings via the ships Flight Control Once on the Flight Deck the patients have to transferred from the helicopter (which usually lands at the after end of the Flight Deck) to the forward Hangar Lift Triage is carried out in the lift before it descends while further patients are being transferred from the helicopter During Exercise Aurora one group of 6 casualties (7 on stretchers) was transferred in a single lift descent Depending on the mix of stretcher v walking wounded cases this number could be safely exceeded The lift takes several minutes to descend from the Flight Deck to the bottom of the lift well opposite the Casualty Reception Area entrance four decks down During this descent the triage process continues

The Casualty Handlers in this process are Musicians deployed from the Royal Marines Bands They work under the direction of their own NCOs with overall guidance from the Triage Officer Carrying a stretcher with a heavy patient across a rolling deck is not easy feat as some of the PCRF clinical staff found during the exercise when given the opportunity to try it It has to be done smoothly evenly and with good co ordination of the team The Royal Marines Musicians perhaps have a natural flair for this but supplemented by rigorous training Further training including extended First Aid and Combat Casualty Care Skills instruction was given during Exercise Aurora The enthusiasm discipline and hard work of the Casualty Handling teams is vital to the successful management of Mass Casualties by the PCRF

Given these inevitable delays in transferring patients from helicopter to Casualty Reception Area even if no warning is received prior to landing, the PCRF staff will still have a 15 or 20 minute period before the first patient enters the complex Although this gives the staff more time to prepare it increases the burden on the Triage Officer and Casualty Handlers who may have to institute or continue life saving manoeuvres as the Hangar Lift descends

Communication between the Flight Deck and the Casualty Reception Area is vital both to give Resuscitation Teams warning of what to expect, and also to allow advice and support from the Senior A&E Doctor to the Triage Officer However there is no easy method of communication in the Mascal situation Flight Safety mandates that radio communication on the Flight Deck is minimised and goes through Flight Control The only phone on the Flight Deck is in the Flight Control Office and may be otherwise in use Use of this phone was practised during the exercise but takes the Triage Officer away from his main task Alternatives include sending a runner with a written message (slow) or using hand signals from the lift as it descends (line of sight dependent and open to misinterpretation) No ideal solution has yet been found

Triage

From the foregoing it is obvious that the key role in successful management of a Mass Casualty situation in the PCRF is that of the Triage Officer This individual must be experienced in performing Triage must be fully conversant with the principles of Civilian and Military Triage (Refs 4 & 5) must have excellent knowledge of the PCRF and its capabilities/capacity at the time of the incident must possess the leadership skills

to direct Casualty Handling [illegible] the Clinical skills necessary to [illegible] measures during the transfer [illegible] Casualty Reception Area. They [illegible] be fully in date for Flight Deck Training, [illegible] aware of safety issues and able to liaise effectively with Flight Control Helicopter crews, Ship's Command and PCRF staff.

Few (if any) clinicians fully meet all of these requirements. During recent operations and exercises this role has been undertaken very ably by the Senior A&E Nurses on board. The crucial and demanding nature of this task must be understood by all involved in the planning and development of the PCRF/PCRS and the associated training requirements recognised and met.

Modern Military triage divides casualties into five categories, four grades of urgency for live patients, the fifth category being "Dead". Although the Royal Navy uses the NATO system T1-4, the Army and the Royal Marines still use the older P1/P1Hold/P2/P3 system and the latter is the system currently taught on BATLS courses (Ref. 4). During Exercise Aurora, since most casualties were initially triaged ashore in Royal Marines facilities, the P system was used, and this convention has been followed for this article. It is hoped to address this anomaly in the forthcoming revision of the BATLS course (Ref. 6). P1(immediate resuscitation and/or surgery) equates to T1. P2 (early resus./surgery) to T2, and P3 (most but not all walking wounded, and some stretcher cases, treatment may be delayed) equates to T3.

P1(Hold) is a category used in Mass Casualty situations only for patients with a poor chance of survival whose injuries are so extensive that urgent definitive treatment would divert limited resources away from those with a better chance. They are given supportive nursing care and analgesia only at first. If they survive until circumstances allow resources to be used for their definitive care, then their triage category is revised. The NATO equivalent of P1(Hold) is T4.

Even though patients may have been allocated a triage category before being flown to RFA Argus, their condition may have changed during the flight. Repeat triage on the Flight Deck/Hangar Lift is essential. In a Mass Casualty scenario, patients who are in established cardiac arrest on arrival are dead and should not proceed further into the Casualty Care System (Ref. 7). Separate arrangements are in place for disposal of the dead. Likewise P1(Hold) patients do not require Resuscitation, ITU or HDU facilities. They are transferred forward of the Hangar Lift Well on 4 Deck where they may be nursed until circumstances permit transfer to a General Ward bed or their triage category changes.

P1 patients are moved rapidly into the Casualty Reception Area or ITU as soon as the lift has completed its descent. P2 patients are then moved to any remaining Resuscitation Bays, in order of clinical severity and thereafter diverted to HDU. P3 patients are initially held on the lift (or forward of the lift well if the lift needs to go back up quickly) then diverted up the ramp or stairs (with escort) to HDU for further assessment. This sounds straightforward but when 20 patients in various triage categories arrive simultaneously in the lift well bottom, together with casualty handling teams, to be met by Admin staff issuing documentation, the potential for chaos is very high. Lessons learned during Exercise Aurora were that the Triage Officer must remain in overall charge at this stage and direct movement of casualties appropriately. A rush forward by other Clinical staff (to an understandable desire to start treating patients) is counter productive. Two teams of Admin clerks are required: one in the lift well to document P1(hold) patients, and P2/P3 patients diverted to HDU, and the other team in the Casualty Reception Area to document P1 & P2 casualties as resuscitation is under way.

Resuscitation

Most "Mass Casualty" will involve large numbers of Trauma victims, although the possibility of a CBRN Mass Casualty must be envisaged (this poses particular problems for the PCRF, outwith the scope of this article). The principles of Initial Assessment and Resuscitation of Trauma patients are well documented elsewhere (Refs. 4 and 8). Recent developments in this field will be reflected in new editions of References 4 and 8, both due in early 2005. Once in the Resuscitation Bay the patient should be managed according to these principles, with little if any difference in clinical practice from that found in a UK Accident & Emergency Department. The Author has 15 years experience of leading Trauma Resuscitation in NHS A&E Departments, and

so experience of managing multiple casualties an Army Field Hospital outside Basra during Iraq War 2003 The facilities for Trauma esuscitation in the PCRF compare very vourably and there is no reason why the very ghest standards of care cannot be maintained ing the equipment available The issue erefore becomes one of selection of susuitation Staff and maintenance of their ills and training

ransfer to Definitive Care

neeessity Surgical and Anaesthetic resources the PCRF are limited At PCRF100 it might be ssible to run three Operating Tables nultaneously (although the second-ary theatre o decks above the Casualty Reception Area is st used only for minor cases) During Aurora PCRF25 we were able to exercise only one ble In a Mass Casualty situation even with 2 3 Tables running Surgical Triage must be orous to avoid unnecessary deaths of lvageable patients while operating time is ppropriately used in hopeless causes

Surgical triage should be done by an perienced Consultant Surgeon who is not herwise committed since especially in the rly phase of the Mascal the Theatre priorities ll change continually as further patients are sessed and in the light of individual patients sponse to treatment results of investigations The paradox is that the same skills and dgement which are needed in Surgical Triage also required in the Operating Theatre and e Surgeon cannot be in both roles nultaneously Similar considerations apply to e decisions about which patients will most nefit from Intensive Care although separating e role of Consultant Anaesthetist and Intensive are Consultant may help resolve this There is easy solution but the close proximity of asualty Reception ITU and main Operating eatre make it easier for Consultants to move tween the three areas Good co operation tween A&E Consultant(s) and Consultant llengines in the Surgical disciplines naesthetics and Intensive Care can also do uch to ease the situation

Staff on the Wards may find themselves aling with unfamiliar problems in a Mascal hese range from treating minor injuries in P3 tients which in civilian practice would be alt with on an out patient basis to initial ies isation and assessment of critically ill P2 or even P1 patients for whom there is no room in the Resuscitation Bays or ITU area These factors must be considered in the selection and training of staff (Medical and Nursing) who will work in these areas

Finally the limitations of space on the PCRF and the fact that further casualties may be received at any time mandate that the patient journey must be a rapid one Movement from Resuscitation Bays to Operating Theatre or ITU from ITU/Recovery to HDU from HDU to General Ward and finally from the PCRF/PCRS back to UK (or better yet back to duty) must be accomplished as rapidly as circumstances and the patient s condition allows It is self evident but worth emphasising that once the PCRF is full it ceases to be a PCRF since it can no longer receive casualties Plans for rearward evacuation of patients must therefore be thorough and workable or else alternative Casualty Receiving facilities must be identified if operations are continuing

CONCLUSION

Even with the lowest staffing levels (PCRF25) the PCRF can receive Mass Casualties triage them and resuscitate effectively However the limited Surgical and Anaesthetic resources at PCRF25 severely constrain this function with the risk of dangerous delays in care In reality PCRF25 was only ever intended to be a transit state and the flexibility which allows rapid augmentation to PCRF50 or preferably PCRF100 must be preserved

The earlier the warning of inbound mass casualties is received the better the PCRF will be able to handle them Crucial to the management of mass casualties is the role of the Triage Officer and the specifications for this role have been discussed Well trained Casualty Handling Teams are also essential Problems with communication between Flight Deck and Casualty Reception Area have been identified and will be addressed

The importance of Surgical Triage by an experienced Consultant Surgeon supported where necessary by A&E and ITU colleagues has been emphasised Training needs of PCRF staff in all professions and areas should be regularly reviewed against their likely operational roles including roles in Mass

Casualty situations. The difficulties of meeting this need against a background of high staff turnover from one exercise/deployment to the next are fully appreciated.

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Trauma

The Management of Burns on HM Ships – A Review of Burn Care Provision and Special Factors associated with Burns at Sea

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Historical perspective

Fire at sea has always been a terrifying and dangerous experience for seafarers. In Nelson's day ships were constructed from and filled with inflammable materials so much so that they could be used as effective incendiary weapons against ships by setting them alight and sending them into enemy fleets. Now is then the consequences of fire accidental or as a result of enemy action are grave. Throughout history burns have been a notable cause of casualties in ships at sea. In the future naval casualties will continue to require treatment for burns sustained during war and peace from enemy action or from the accidental hazards inherent in warships.

As long ago as the early 1600's John Woodall Royal Navy (RN) surgeon recorded the problem of burns in the Navy's ships and detailed the recommended treatment for them. Richard Wiseman wrote in 1686 "*We know by our experience that Burning by Gun powder and other materials do too frequently happen at sea*". In 1782 Sir Gilbert Blane of HMS Formidable emphasised that burns common in naval actions of the time and described the mechanism of injury. They tended to result from cartridges catching fire or from careless handling of the powder horns used to prime the guns. The substant burns were frequently sizeable since gun crews in those days fought stripped to the waist.

In WWI the commonest causes of naval burns were from flashback and cordite burns. In WWII with changing patterns of warfare there continued to be large numbers of burned casualties in ships but now a major cause was aerial bombing[1]. Burns were not limited to ships at sea nearly half the casualties from US Navy ships attacked in port at Pearl Harbour were burned. More recently in the much more limited conflict over the Falkland Islands (Operation [Op] Corporate) over a hundred burns were treated in the burns unit on the hospital ship *Uganda*[2].

In peacetime there are still a significant number of burn injuries on ships. Between 1988 and 1994 there were an average of one hundred and twelve burns on RN ships, submarines and ships of the Royal Fleet Auxiliary (RFA) service each year. Three hundred and eighty two cases of burns were reported between 1980 and 1993 in peacetime (i.e. excluding the period of Op Corporate) with a much larger number of minor burns going unreported. Of the more serious burns, one quarter were a direct result of fire and explosion. Fifty six per cent were as a result of contact with steam or hot liquids.

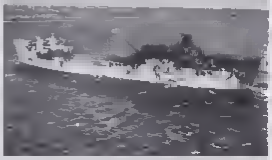
Maritime aspects of burn care provision and incidence of burns at sea

Ships at sea are inevitably limited with respect to

their available resources for dealing with casualties including those with burns both in terms of their naval medical manpower its expertise and the equipment and supplies needed for their function. These limitations become noticeable with even a limited number of casualties while in a mass casualty situation they may rapidly be overwhelmed. In the United Kingdom it is the norm for patients with significant burns to be referred to a specialist burns centre including some patients with relatively minor burns that will not require surgery. This requires transfer often after a period of assessment and stabilisation to a facility some distance away. However even in relatively remote parts of the United Kingdom this transfer takes only a few hours. Casualties on a ship at sea in a remote area may face a transfer time of many days. Military considerations may slow this transfer even further and so delay prior to reaching specialist burns care is an ever present factor. Serious secondary complications of the burn wound such as respiratory complications or sepsis may develop over some days. As a result the ship's medical staff practitioner as well as providing immediate care must also deal with these later sequelae.

While overall numbers of burns casualties in ships is obviously lower during peacetime than during conflict the causes and patterns of burns sustained while never exactly the same between any two episodes of burning remain similar. Ships are confined spaces that necessarily carry substantial quantities of flammable fuels as well as explosive munitions and propellants. On exercise during immediate preparations for war and away from theatre during the period of conflict the causes of burns are similar to those seen on board during peacetime. There is evidence in the non maritime setting that during such times the number of burns casualties from accidents increases. During preparations for the land assault in the Gulf War there were a number of burns fatalities and overall in the Vietnam War the majority 54% of burns casualties were accidental while only 46% were the result of combat[4].

In combat there may be a high incidence of burns particularly in the maritime setting. The relative proportion of burns in casualty templates varies widely with the type of warfare because of the hazards of the particular environment as well as the variation in weapons used. Moreover the incidence of burns in war is thought to be increasing generally. An incidence of 3% to 4% is quoted for both WW2 and Vietnam while more recent conflicts have seen figures of between 10% and 20%[5]. An overall figure of 18% of all British casualties sustaining significant burns during Op Corporate reflects not just the naval action but also the vulnerability of land forces transported by sea[6]. The many (>150) burns casualties caused by the bombing of the Sir Tristram and Sir Galahad with the embarked Welsh Guards at Bluff Cove had a notable effect on the burns statistics for the whole operation.



Mechanisms of heat transfer and the effects of confined spaces on severity of the burn wound

Causes of burns in general military scenario have been divided into three subtypes and these are also applicable to the maritime environment in particular.

Explosive flashes cause superficial flash burns. They result from the detonation of either high or low explosive which produce very intense heat but for a very short duration (milliseconds). Consequently the total heat energy released is low.

Fuel explosions/fires produce an expanding volume of burning gases and result from ignition and explosive dispersion of flammable liquids or gases. These are much less intense than weapon flashes but last for several seconds and consequently the total dose of thermal energy is much higher. As a result deep burns of exposed parts of the body are likely.

Flashovers – secondary ignition of un burnt

ombustible materials can occur suddenly pecially after the temperature rises in confined aces and air is admitted This phenomenon sults in a pattern of thermal flux similar to a cl explosion but the fire continues with great tensity after the initial flashover event allowing flashover the fire is described as fully volved *i.e.* all combustible material is alight nsequently the whole body is at risk from ns not just exposed skin since the continuing me and heat will quickly overcome even flame ardant (FR) clothing unless the fire is unguished or personnel are able to escape mediately

Unburned combustible material may be the spent fuel of unexploded missiles within the ip as was seen in some of the Exocet attacks ring Op Corporate or the ships own fuel king from damaged pipes or tanks It was the ip a diesel petrol and aviation fuel stores that ellind the fire after the attack on RFA Sir ilahad This initial events such as weapons tonations may quickly result in fully involved s with continuing release of large amounts of at energy Such fires may cause casualties om contact burns from touching hot objects or rfaces in compartments adjacent to but not rectly involved in the fire Secondary fires may urt in adjacent compartments as their mperature rises

Damage to piping can result in further hazards om release of their contents Ruptured fuel ping feeding fires is an obvious problem but perheated steam escaping from a broken pipe ay be almost invisible but will produce deep rns if it touches unprotected skin If inhaled it a potent cause of airway burns particularly in lower respiratory tract

The confined spaces in ships result in more pid increases in temperature and cumulations of noxious gases in or close to es than would be the case of fires in the open is notably exacerbates the injurious effects on rsonnel Similarly oxygen depletion is more nd The temperatures of flash and fuel fires in ch spaces can exceed 1000°C for this reason ata from Israel from terrorist bus bomb attacks flect this phenomenon in the land environment burns were thought to be significantly worse an would have been suffered from the same plosion in the open It is thought that the buses ould have taken a short but finite time to rupture during which time the fireball was confined and concentrated resulting in increased severity of burns Similarly the Molotov cocktail syndrome described by Bennett resulted from confinement of the burning products of petrol bombs thrown into cars resulting in more severe burns and worsened inhalation injury[12] These phenomena are well recognised as a serious threat to personnel in the confined spaces of ships compartments Moreover the compartments where most fires have occurred are frequently those from which exit is most difficult If escape is only by means of vertical ladder the time of exposure of personnel involved is increased and they have to climb up through the highest temperature layer in doing the resultant burns even worse

Pathophysiology and principles of treatment of burns at sea – overview

This section is not intended to form an in depth treatise either on the pathology of the burn injury or the more generic aspects of treatment However a basic understanding of these is essential in order to best treat burn casualties An appreciation of the structure and function of the skin and the local pathophysiology of the burn wound is required and also the significance of the special areas and in larger burns a knowledge of the *systemic* pathophysiology involved This information and the fundamentals of treatment is easily found in standard texts[13, 14] However certain aspects of treatment relevant to the situation on board ships are less well appreciated these will be examined in greater detail In particular airway injury fluid resuscitation and local treatment of the burn wound (including escharotomy) as well as electrical and chemical injuries are considered

As in almost every area of medicine controversies exist concerning the management of burn injuries The Emergency Management of Severe Burns (EMSB) training programme begun by the Australia and New Zealand Burn Association and adopted by the British Burn Association (BBA) is an attempt to standardise procedures in the face of the disparity of opinion The BBA run regular training courses in association with the armed forces to teach this standardised approach within a military framework

Training for management of burns and the treatment regimens in the military setting also

encompasses sources such as first aid manuals Casualty Treatment Regimes (CTR s) and Battlefield Advanced Trauma Life Support (BATLS) courses In addition the medical library of each ship in the Fleet complemented for a medical officer contains the excellent monograph Burns the first five days

In the earliest stages of burn care there is good agreement between these sources Initial management is by the ABC principles well known to most doctors and medics and it is stressed that burn care must run concurrently with management of other injuries in the multiply injured patient Some life threatening injuries require much greater urgency of treatment than do most burns even if there is airway involvement or escharotomy is required Faced with the dramatic appearance of a visible burn it is all too easy to focus upon this wound and let more serious injuries go untreated

Inhalation Injury

Injury to the upper airway is principally thermal injury and follows the same pathophysiological pattern as thermal injury to the skin It occurs as a result of the inhalation of hot gases that have a direct heating effect on the mucosa of the upper respiratory tract Consequently it tends to be seen particularly when the victim has been delayed or trapped in a confined space with a fire unable to avoid inhaling hot gases As with a thermal burn to the skin oedema of the mucosa develops and at its most serious can lead to airway obstruction A trap for those managing such casualties is that the effects may not be apparent immediately they may develop insidiously as oedema increases reaching a maximum over twelve to thirty six hours

The upper respiratory tract transfers heat away from the inhaled gases so efficiently that thermal injury to the lower respiratory tract is rare A notable exception is injury from inhalation of superheated steam which is used on warships and in a number of industrial settings and can produce thermal injury low down in the respiratory tract However most lower respiratory tract injuries in shipboard fires result from toxic products of combustion reaching the lungs These exert their injurious effects in a number of ways gases can have a direct toxic effect on lung tissue or can dissolve in the water of respiratory mucus or the interstices and dissociate to form acids or alkalis that cause a chemical burn Particulate soot can also be carried to the lower airway and cause irritation and toxic damage in the alveoli

Systemic intoxication may occur when inhaled toxic substances reach the lower airway and are absorbed There are many such substances including carbon monoxide (CO) carbon dioxide (CO2) cyanide compounds hydrogen fluoride hydrogen chloride (HCl) aldehyde and acroleins[1] CO2 causes acid base disturbance if high partial pressures are inhaled as does HCl which dissolves rapidly to form hydrochloric acid CO is readily absorbed and binds to haemoglobin (carboxyhaemoglobin [COHb]) reducing the blood s oxygen carrying capacity If sufficient CO is bound tissue hypox a results and may result in severe or fatal damage to the brain and other organs Cyanide poisoning results from absorption of hydrogen cyanide (HCN) which is produced as a result of burning plastics It is absorbed readily through the lungs and binds to the cytochrome system causing disruption of cellular metabolism It particularly neurotoxic and poisoning can cause convulsions and in sufficient quantities loss of consciousness and death

Despite attempts to avoid potentially toxic materials in the construction of warships many materials inevitably remain that produce toxic substances when heated or ignited many substances can produce toxic vapours when exposed to high temperatures even if they do not ignite The hazards of the products of combustion from fires on RN warships were seen during Op Corporate in 1982 when an AM39 Exocet missile hit HMS Sheffield Almost immediately fires broke out in the diesel fuel tanks machinery and engine spaces the galley and messdecks A large part of the ship filled rapidly with thick acrid smoke Twenty men were killed between nine to eleven men as a direct result of the missile strike the remainder it is thought by the effects of smoke inhalation The smoke resulted from the burning of the unspent fuel of the missile the ship s diesel and many materials within the ship including cabling and plastic wall coverings The smoke is likely to have contained a large number of toxic substances eighty nine surviving members of the ship s company were affected by smoke inhalation It is likely that in addition to the cocktail of toxins in the smoke CO poisoning

contributed to a number of these injuries

On ships today both the breathing apparatus (BA) and emergency life support apparatus (ELSA) are charged with compressed air Neither of these was available forward in HMS Sheffield ELSA had not yet been introduced and the BA sets were stored within a smoke filled area Personnel therefore had to use service anti gas respirators (AGRs) to re enter compartments in order to retrieve firefighting equipment Unlike BA sets AGRs filter out some toxins and smoke do not filter out CO or CO_2 Moreover they do not supply oxygen and a number of those who entered smoke filled compartments wearing them later reported thumping headaches and shortness of breath This may have been due to the effects of CO and CO_2 inhalation

Inhalation injury is a potentially life threatening condition and timely diagnosis and optimal treatment are therefore of prime importance It can present clinically in a number of ways depending on the predominant pattern of injury Patients may present very early with respiratory distress or in a depressed state of consciousness at the scene Usually in such cases hypoxia or CO poisoning is the cause i e systemic intoxication predominates CO poisoning is the cause of most deaths that occur at the scene of the fire[9] and survivors describe these people as being overcome by the fumes If there is injury to the lower respiratory tract this is usually clinically apparent from deterioration in the patient s oxygenation This may be immediate or injury not develop until after the first twelve hours and at any time up to several days

More commonly thermal injury to the upper airway (i e at and above the larynx) predominates and this manifests as increasing respiratory obstruction over some hours as a result of developing oedema This is less dramatic clinically and it is vital that it is not missed

There are a number of points to look out for in the history and examination that are common to each of these scenarios A history of burns within an enclosed space or associated with an explosion or if the patient has been trapped should immediately alert medical personnel to the possibility of an inhalation component to the burn On ships many or all of these injuries may be features of a fire On examination obvious signs are burns around the nose and mouth singeing of nasal hair a productive cough with carbonaceous sputum a change in voice especially hoarseness and signs of respiratory embarrassment such as tracheal tug or rib retraction

The key to effective management of the burned upper airway is a high level of suspicion for the problem From the outset high flow oxygen should be administered to patients with any suspicion of an airway burn and they should be observed closely for the signs described Rapidly progressive oedema threatens the airway and makes intubation difficult At the first sign of it developing therefore especially if stridor is noted or the patient is in respiratory distress a surgical airway should be established (mini tracheostomy) or in a medically well provided environment endo tracheal intubation performed

For burns to the lower airway or systemic intoxication treatment is essentially supportive For burn injury below the larynx oxygen is especially important and intermittent positive pressure ventilation (IPPV) or continuous positive airways pressure (CPAP) has a place where this is available For CO or HCN respiratory support while natural clearance of the toxins occurs is the established treatment Hyperbaric oxygen has a place in selected cases but is unlikely to be immediately available in the maritime setting Indeed facilities for all of these treatments except surgical airway may be very limited

Consequently such injuries sustained at sea remote from specialist help potentially carry a poor prognosis On RN frigates and destroyers facilities exist for administration of oxygen by mask for surgical airways and also for intubation by practitioners with the necessary anaesthetic skills Portable suction is also available The available expertise to carry out such treatments may also be severely limited There are no facilities for formal ventilation or for laboratory measurement of COHb On the Primary Casualty Receiving Ship (PCRS) RFA Argus however there are ten intensive treatment unit (ITU) beds with ventilators and when fully staffed sufficient personnel to man them The treatments required for significant airway injury cannot be delivered adequately on smaller ships

and casualties need to be transferred expeditiously to an appropriate floating or shore side facility where they can

Burn shock and fluid resuscitation

Fluid loss from the circulation is one of the systemic pathophysiological changes that occur in response to burns. Thermal injury causes changes in the microcirculation that lead to loss of fluid from the intravascular space in the area of the burn. If the burn exceeds between twenty and thirty percent of the Total Body Surface Area (TBSA) then this process becomes overtly systemic with the development of general oedema, hypovolaemia and shock. Burns greater than 15% TBSA require intravenous fluid resuscitation and the TBSA burned is used to guide the volume of fluid needed. The most accurate technique to determine the TBSA burned is by mapping on a chart. Charles Lund and Newton Browder from Boston Massachusetts designed that most commonly in use. Like others at the time (WWII) Lund and Browder noted the increasing importance of TBSA not only as a prognostic indicator but also as a determinant of the volume of fluid replacement therapy. They went on to outline the percentages of body surface area represented by parts of the body using a diagrammatic format that forms the basis of the Lund and Browder charts in use today. As the relative percentages change with age, charts are available for different ages.

Adult sized Lund and Browder charts are in use on RN Ships and in most UK burns units. All burned areas are mapped onto the chart, ignoring only areas of simple erythema. The total burn area, including all depths of burn, is then calculated as a percentage. This percentage is used with an estimate of body weight to calculate the volume of resuscitation fluid required, using one of a number of formulae. The formula in the widest use in civilian practice is Parkland's, which prescribes 4 ml / kg body weight / percent burn over the first 24 hrs, *starting from the time of the burn not from the time of commencement of the resuscitation*. Half of the calculated volume is given over the first eight hours and the remainder over the subsequent sixteen hours. This step down aims to roughly mirror the gradual decrease in capillary leak and oedema formation. The Parkland formula is increasingly used in the military setting despite not being the formula prescribed in CTRs. Evidence for the benefit of any one type of fluid over another (colloid versus crystalloid) is conflicting, but the ready availability of Hartmann's solution (Ringers Lactate) has empirically made this the replacement of choice at least in the early phase of resuscitation. It is also recommended in the EMSB guidelines[7]. Replacement should be given intravenously using two large bore peripheral cannulae. A urinary catheter should be used to provide an ongoing measurement of urinary output, which is vital for accurate monitoring of the adequacy of fluid replacement.

The management of burns shock outlined here relates to the immediate post-burn period and needs therefore to be carried out with the limited facilities and expertise present on the ship. RN frigates and destroyers are supplied with all of the equipment necessary for this early phase of treatment. Cannulae, intravenous giving sets, bags of IV fluid and urinary catheters are all carried. In shore side burns units repeated serial monitoring of serum urea and electrolytes help to guide ongoing intravenous fluid replacement in a resuscitation sized burn. On a warship this is not available and reliance must be placed on clinical parameters, particularly urine output. RFA Argus does have laboratory facilities and so as with ventilation is able to provide more advanced ongoing care to severely burned patients after their initial treatment on smaller warships.

Treatment of the burn wound

A large number of different dressing materials have been used in burns in the past and there is still considerable difference of opinion amongst clinicians today. The use of dressings both to prevent infection of the burn wound and prevent fluid loss from the burn was the aim of early specialised burn dressings. During WW1 wax dressing of burns gave way to the use of picric acid with wax then reappearing as ambrine dressings. In 1925 Davidson described a method of local sealing by tannic acid and Fisher in 1932 described using the method for the victims of an explosion on a RN submarine. Tannic acid cauterisation therapy gained widespread use through WWII but although the method reduced the large exudative fluid loss from the burn it did not always prevent infection. As a result first gentian violet and then triple dye were used in dressings for their antimicrobial properties and later the method Pittman described using ten percent silver nitrate added to tannic acid[8] was

Jopted Since tannic acid acts by encouraging e formation of a stiff eschar its use on burns of e hands is disastrous For this and other asons tanning of burns duly fell out of favour id attempts to seal the burn would gave way to rly replacement of fluid to prevent the burns ock. Topical antimicrobials containing silver mian is widespread use today

Once first aid measures have been applied the urn can be covered with a clean dry cloth while her more pressing aspects of the patients juries are attended to Subsequently the pected time delay prior to transfer determines w much early wound care should be carried t and what dressing to use

If a patient can be expected to reach a ecialist burns facility quickly then a dressing at is easily removed to allow re inspection of e burn wound is useful Ordinary household ngfilm though not formally sterilised has en shown to be remarkably bacteriological ean when fresh off the roll It has gained despread use as a temporary initial burn essing It is cheap and plentiful and allows the urn wound to be inspected repeatedly at fferent stages of evacuation even without its moval making it in many ways an ideal essing for military use A more traditional ound covering of tulle gras (Jelonet®) under ize and crepe bandages though not allowing spection in the same way is a useful alternative clingfilm is not available and preferable if the lay is longer because of better absorption of ound exudate Dressings like these without any timicrobial properties are acceptable if dic lay prior to transfer will be less that twelve urs If transfer is longer than this then the plication of topical agents while making later sessment more difficult is beneficial in terms prevention of infection The topical timicrobial burn dressing carried on RN Ships the widely used silver sulphadiazine cream lamazine®) This converts the wound to a oist wound covered by a lot of dirty coloured eam mixed with exudate which will have to be moved to permit subsequent specialist sessment of burn are and depth

Despite covering the wound with an occlusive essing repeated re inspections are required at tervals to ensure that the original depth sessment of the burn has not changed and that ere are no signs of local infection around the [illegible] sulphadiazine cream should be applied if it has not been already and systemic antibiotics administered if there are signs of generalised sepsis

Burns to the hands are a special concern because of the stiffness that rapidly results from lack of movement scarring and contracture formation Active mobilisation from the earliest stage can help to prevent this In 1941 Surgeon Lieutenant Commander John Bunyan RN first described the use of bags as dressings for burns of the hands" His method described as the envelope technique sought to provide a dressing that was frictionless transparent and allowed active and passive movement of the injured part at all times In order to promote early restoration of function patients were encouraged to use their hands as soon as possible from the time of application of the envelope including using a knife and fork Bunyan s bags were made not from polythene but from a material derived from silk that was nevertheless transparent waterproof and inert The use of polythene burn bags is widespread today both in civilian and military practice and like clingfilm allows repeated reassessment of the burn without the need to remove dressings or creams Plastic hand bags are in use on RN ships today fulfilling Bunyan s aim of producing a dressing suitable for use under active service conditions such as in the sickbay of a man of war

Treatment of other special areas of burn wound such as the perineum the face and the upper airway consists of adapting dressing techniques and using tubes (endotracheal tube or urinary catheter) while it is still possible to do so before oedema supervenes

Burn injury is usually extremely painful Although sensation may be lost over a deep burn the surrounding area may be very painful Adequate intravenous opiate analgesia is usually required for pain relief It is best administered in repeated small intravenous aliquots titrated against response

Escharotomy

The timing of escharotomy the surgical division of the leathery inelastic eschar produced by the full thickness burning of skin is determined by the clinical signs It is not usually necessary in the immediate post burn

period [illegible] time to develop [illegible] urgent in circumstances [illegible] if the patient is showing [illegible] the limb it should be [illegible] elective fasciotomy [illegible] commonly applied tender [illegible] completely ischaemic [illegible] problems. In this respect [illegible] MSB teaching is that the procedure [illegible] fasciotomy is not normally indicated [illegible] procedure. Blood loss may be considerable and a clean environment preferable to minimise contamination of the wound produced. The most suitable environment for undertaking escharotomy is an operating theatre. However on ships the delay before transfer to an ideal facility may be such that life or limb may be threatened if the procedure delayed until after transfer. Once again careful assessment is needed of the likely delay involved before the casualty reaches more specialist care.

Currently RN frigates and destroyers whilst equipped with an operating table and the basic surgical instruments required for escharotomy lack electrocautery in the form of cutting diathermy or diathermy forceps. For this reason transfer either to an echelon facility such as an aircraft carrier, PCRS or to shore for the operation is preferable if time allows.

Electrical and chemical burns

Thermal burns produce the largest proportion of burn casualties at sea. Nevertheless electrical and chemical burns do occur and a number of important features make consideration of them important.

Electrical injury represents a special case of burn injury. As there is much greater likelihood of burning of deeper tissues. Although only relatively small entry or exit burns may be seen on the skin there is commonly underlying burning of muscle. This means the fluid requirement will be greater than assessed by calculation of TBSA burned and further underestimated if rhabdomyolysis is present. Swelling of the limb due to oedema may occur with risk of compartment syndrome making urgent fasciotomy necessary.

A number of substances capable of causing chemical burns are in use on warships and despite generally good compliance with COSHH* procedures chemical burns do inevitably occur. In civilian practice as many chemical burns occur in the hand and upper limb as to all other parts of the body combined reflecting the fact that the victim is often using the chemical before sustaining a burn. The principle difference from thermal burns is the prolonged duration of the insult. The noxious chemical continues to burn the tissues all the time that there is some in contact with the skin until it is diluted sufficiently or neutralised with an antidote hence the need for copious and prolonged irrigation. First aid measures for all chemical burns with the rare exceptions of burns from elemental potassium, sodium and lithium begin with thorough irrigation with water a solution is possible. Strong acids have many uses on RN Ships and cause burns that range from erythema to blackened eschar. After copious irrigation the burnt skin is treated as for a thermal burn. Exposure to strong alkali causes less immediate tissue destruction than acids but as the chemical penetrates tissue it causes much delayed damage. For this reason irrigation is particularly important and should be continued for at least an hour. After this treatment is as for a thermal burn.

Phosphorus is a component of some munitions and burns from phosphorus require special attention. Phosphorus ignites spontaneously in air and particles continue to burn in the tissues. The burning can be put out with water but embedded particles need to be removed – they will reignite on drying. The application of copper sulphate solution to the wound makes the phosphorus more easily visible by converting it to black cupric sulphide allowing it to be removed. It must be emphasised that copper sulphate solution is applied as a temporary aid to phosphorus removal and must not be left applied to the wound in soaked dressings – a procedure which has led to severe copper toxicity and even death from absorption. As well as causing hypocalcaemia phosphorus burns can be associated with marked hypotension. Systemic phosphorus absorption may result in liver failure and death if its removal from wounds is delayed.

Evacuation

After initial management on board ship soon after the time of burning all but the most minor burns will require evacuation to more specialist care. Clearly each case is different but as a guide partial thickness burns of less than 10% TBSA may be appropriate to manage on board. In a

[illegible]ases of doubt. Escort with a specialist [illegible]ted for transfer is indicated. Such [illegible] should usually take place as soon as possible. [illegible]s essential however that each casualty is [illegible]rior to transfer. Treatment to resuscitate the casualty may be life saving in the early period [illegible]ore severe injuries and by stabilising patient [illegible]nsfer may prevent deterioration during the evacuation. The respiratory system is of prime concern for the period of evacuation. Whatever mode or modes of transportation are used patients with an airway burn need to be examined at the journey and maintained on 100% oxygen throughout. In selected cases with a more risk of catastrophic airway deterioration *en route* [illegible]urgical airway will be established before transfer. While early enteral feeding is desirable [illegible] transfer period if not of prolonged duration is usually safer for severe burns with the stomach empty. A nasogastric tube should therefore be [illegible]ted prior to evacuation for burns of greater than [illegible]0% TBSA. Aspirated regularly and left [illegible] free drainage between times.

Comprehensive documentation is needed to accompany each patient for their transfer to the next level of care and communication should previously be established where possible to discuss patients prior to departure.

The mode of evacuation will be different in each case depending on what is available. The distance involved, the numbers of casualties and urgency of their evacuation and whether an evacuation chain has previously been set up for earlier casualties. Casualties on RN frigates and destroyers having their own ships flight may be most appropriately moved by helicopter, while smaller ships may have to rely on the aircraft of other vessels. An aircraft carrier, HMS Ocean or CRS may be the receiving facility for a casualty from a smaller ship and be able to retrieve the injured using their own aircraft. Transfer even the shortest distance of a severely burned patient by sea boat could be extremely hazardous and should be avoided in favour of a more controlled means of transport if it is possible.

Echelons and Levels of care

Medical care for the wounded in a military setting is provided by an evacuation chain. As a casualty is evacuated rearwards, the available equipment and medical expertise increases progressively at each stage, from first aid to definitive care. In NATO terminology medical [illegible] similar [illegible] [illegible]ed an [illegible] [illegible]ks and echelon [illegible] the capabilities they provide. In either [illegible] it remains the case that the higher levels [illegible] the functions of lower levels, and the terminology is done to be updated as the terminologies [illegible] the US.

In the current terminology, echelon [illegible] the basic medical support [illegible] pillars. This ranges from the [illegible] available [illegible] major war vessel [illegible] Royal Marines Hospital facility found in [illegible] Hospital Stockhay with medical officers [illegible] destroyer or submarine. The design of echelon two (E 2) requires at least [illegible] surgical team capable of damage control surgery but [illegible] minimal holding capacity. On HM vessels [illegible] found on major war vessels [illegible] aircraft carrier / HMS Ocean. Echelon three [illegible] the several surgical teams with wider expertise found in PCRS or a hospital ship. Echelon four describes the full and definitive care facilities back in the UK that were formerly provided by the RN Hospitals and other service hospitals and are now within the NHS, the starting point being the Royal Centre for Defence Medicine in Birmingham.

Clearly no two facilities are exactly the same in terms of what care can be provided and local liaison will establish this at an early stage.

Burns facilities onboard the PCRS RFA Argos

The ship houses a medical facility over three decks with one hundred beds and has a flight deck and aircraft lift that are used for receiving

and moving casualties. Of the bed [illegible] be ventilated ITU beds and twelve high dependency unit (HDU) beds. A further [illegible] general beds in the form of bunks [illegible] the wind. In addition there is a foot bay resuscitation room and two recovery beds adjacent to theatre. The operating theatre contains three operating tables. In terms of burns surgery the equipment includes instruments and diathermy necessary for the procedures of escharotomy and tangential excision with split skin grafting. The radiological facilities include a standard X ray tube and CT scanner and there is an equipped physiotherapy space. A burns bath for dressing changes is included in the current kit but there have been problems with its use even when only part full while the ship is at sea due to water spillage.

Mechanisms of burning in ships: the Op Corporate experience

Mechanisms of burning may be difficult to ascertain precisely after the event. Histories for each casualty are taken retrospectively and the medical notes made at the time of casualty reception especially if recorded by those with little experience of burns tend to concern me on assessment of the injury rather than detail of the cause. For this reason most of the causes of burns are the result of a later deduction.

At times assumptions have been made that all superficial burns are from brief exposure to thermal radiation and all deeper burns are from flame contact. In fact brief flame licks may cause only superficial burns and longer exposure to thermal radiation may cause deep burns. Either may cause burns by igniting clothing.

During Op Corporate more than 150 burned casualties were received by the facility in Ajax Bay from the RFAs Sir Tristram and Sir Galahad. At the time seventy five to eighty of these were described as having flash burns meaning superficial burns that affected only exposed skin with either just reddening or reddening with some blistering. In some cases there was loss of a thin layer of epidermis as a result but with blanching sensate and very tender skin beneath. These fitted with a classical description of truly superficial partial thickness burns confirmed by the fact that when sent away largely untreated (because of the overwhelming numbers to be dealt with) they all healed spontaneously and without later problems. The casualties described exposure to an intense flash of light and heat that would have been of very short duration.

The remainder of the casualties had deeper burns also to exposed areas but with burnt clothing and varying depths of burn beneath this depending upon the number of layers worn. These were attributed at the time to flame in keeping with the accounts of the injured that they had experienced a fireball or flame engulfment for several seconds. These casualties required later surgery in some cases over a period of years and undoubtedly represented a heterogeneous mixture of deep dermal and full thickness burns.

It was noted both at the time and by those carrying out the later reconstruction that the trunks of many of the victims were less badly burnt than their legs a phenomenon put down to the greater protective effect of multiple layers of clothing on the torso compared to that of the single layer afforded by the trousers. In particular burns were seen in some individuals beneath the trousers on the backs of the legs and buttocks and are thought to arise from flame and hot gases passing up the trouser legs. It seems likely that this effect described as the chimney effect by Mehta and Wong[2] would occur more easily if the wearer's trousers had loose fitting bottoms or if the trouser themselves ignited. It certainly fits with a pattern of injury where the individual is escaping from a compartment up a vertical or near vertical ladder.

Some who perished as a result of the attack undoubtedly did so as a result of their burns be they to skin airway or both combined with the inhalation of toxic products of combustion and anoxia. Numbers however remain speculative as recording of causes of death was too inexact at the time.

Prevention, firefighting and protective clothing

The prevention of fire as well as measures for containing and fighting it are of great importance and gradual improvements in these have come about over time progress often being most rapid during times of conflict. Many personnel sustain burns at the immediate time of the incident but burn injury is also a notable threat to the teams of personnel fighting fires. At present a number

automatic firefighting systems are in place on N Ships such as high level (deckhead) water ay systems (some combined with aqueous m-forming foam [AFFF]) to combat bilge fires d the Halon 1301 firefighting drench for achinery spaces although this is being placed by CO drenching in future ships These doubtedly lessen the burn threat to personnel wever there remain many occasions when ry into a compartment by the firefighting team necessary Although detailed examination of efighting techniques is beyond the scope of s review the most immediate protection given personnel by their clothing is considered

Normal working clothes known as Action orking Dress (AWD) combines a degree of otection from burn injury with comfort rability and suitability for long periods of use th a greater risk of sustaining burn injury ring war ships companies enhance their otection by increasing the numbers of layers of thing worn and also don protective hood and ves (the ensemble is described as Action ess [AD]) Firefighting teams require a greater gree of protection again to be able to withstand threat posed by close proximity to ablished fires and short term engulfment in a al explosion

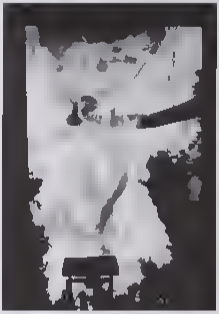
At the start of Op Corporate normal duty rments were made from a blend of polyester d cotton (polycotton) with a polyester content 67% these having gradually replaced older re cotton clothing over the previous five to ten ars The behaviour of the new polycotton thing in fire was brought into sharp focus hen HMS Sheffield was hit It seemed there re marked differences in the responses of the lycotton clothing compared to the older cotton rments when exposed to fire and heat with me garments disintegrating in the blast and sh and thus ceasing to provide a barrier against rmal radiation and direct flame contact with n The initial response to the experience on MS Sheffield was to issue pure cotton coveralls the task force but the conflict was over before s was completed Nevertheless many provements did take place in an *ad hoc* way rough the course of the campaign The wearing more layers was encouraged (in some cases by ducing the ambient temperature inside ships) th as a protection against fire on board and the ld water thrown if having to abandon ship

[illegible] hand experience of [illegible] the nature of fire had drilled appreciation of the threat from burns and the protection from them that clothing needed to provide

Over the last twenty years since the Op Corporate equipment and training have improved significantly Presently working clothing (AWD) and battle clothing (AD) are made from flame retardant (FR) treated materials AWD comprises either FR shirt and trousers (termed No 4's) or a single layered FR coveralls (general service) depending upon the work carried out These garments are made from a cotton / polyester blend in the ratio 75% / 25% (cottonpoly) treated with Proban® to make them flame retardant AD comprises a double layered FR Proban® cotton coverall (issued vacuum packed to be worn only in time of conflict) on top of AWD as above and with FR hood and gloves The hood and gloves (termed anti flash) are also made from single layer Proban® cotton Submariners AWD was until recently made from Nomex ® an inherently FR material (*i.e.* not requiring pre treatment) but is now also made from Proban® cotton or cottonpoly as it offers similar protection Firefighters wear a FR woollen Fearnaught suit treated with a charring agent a double layered FR hood and BA with mask This is in addition to a helmet leather firefighting boots thick socks and Nomex® gloves on top of AWD or AD

Despite these changes in the last twenty years the performance of clothing with regard to its protective properties remains under constant review In particular the notable heat stress placed upon firefighters wearing the clothing detailed above has been appreciated and novel methods of cooling recommended[24] Work using a flame manikin equipped with heat gauges to test different types and combinations of clothing has revealed reliable flame retardant properties of AD alone without the addition of a Fearnaught suit allowing personnel to firefight with less heat strain in response to the ever present heat stresses (e.g. physical exercise high environmental temperatures) Changes to AWD with lighter garments also to reduce heat stress but offering similar protection from heat are currently underway with the introduction of improved action working dress Differences here are essentially of design with the material

complyi[illegible] pure c[illegible]



[illegible] WWI and [illegible] and flash [illegible] however [illegible] protection for service[illegible] particular concern [illegible] fragment[illegible] to the eyes in soldiers. Data from the [illegible] forces relating to burns injury and the effectiveness of protective clothing highlighted a problem with respect to protection of the face. The crews of British armoured fighting vehicles being at risk from fire in confined spaces were issued with protective clothing. During the 1982 conflict with Lebanon it was observed that 98% of all injured tank crew had duly worn their fire retardant overalls. Hardly any however had worn their Nomex® face masks because they were cumbersome and soon became uncomfortably warm for the wearer. As a result three quarters of burned tank crew suffered facial burns. Compliance with wearing of fireproof gloves was much better with over 80% using them and accordingly only 7.5% suffered hand burns. No comparable figures for RN burns exist but the compliance with wearing of recommended personal protective clothing from anecdotal experience is substantially higher. The Israeli figures demonstrate the effectiveness of anti flash when it is worn but the current design of RN anti flash even with good compliance offers no protection for the eyes. The potential vulnerability of the eyes however does not seem to be borne out in practice in an environment of mainly flash/flame threat rather than ballistic fragments since the protective blink reflex will protect the eyes from serious burn injuries except in cases of prolonged flame engulfment which will probably result in death. The current position especially given the extra encumbrance of goggles therefore seems to be justified.

Summary and future developments

Burn injuries at sea remain a significant clinical problem both in peace and war. The treatment of those sustaining burns on ships must be carried out with limited resources and often considerable distance from secondary care. Writing in 1944 Surgeon Lieutenant Commander Wolfe stated that the burned sailor is days from hospital and so first aid become treatment. This remains as true today as then. Many advances in firefighting and prevention have occurred though since this time. Similarly treatment of burns has improved as our understanding of their pathophysiology has developed. Nevertheless many of the principles remain unchanged. Writing two years before Wolfe a Surgeon Lieutenant Commander Maitland writing about war burns stressed the importance of prevention of infection early skin grafting and gentle active movements from the earliest possible time.[illegible]

As regards the future a number of developing treatments in land based civilian practice will no doubt in time be adopted afloat. The ongoing struggle against infection of the burn wound in hospital based practice particularly from multiply resistant organisms has led to strategies for combating these. The use of topical antimicrobials containing heavy metals such as cerium (in Flammacerium® cream) may find application in the maritime setting to counter the effects of delay in treatment. The use of plastic burn bags for hands and chlorhexidine dressings is now routine and manufacturers regularly produce new materials and designs of dressing. Some of these will be of use in the maritime or military settings. The developing technologies of using artificial collagen dermis or culturing patient's own keratinocytes for use as grafts will find their place in future burns therapy albeit some distance back from the acute setting at sea.

There have [illegible] battle through our history and naval [illegible] continue to be developed. While defensive strategies including protective clothing continue to improve the incidence of both blast injury and burn wounds may well increase in conflicts of the future.

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A fuller account of the subject can be found in the Pharmaceutical Society of Apothecaries in London.

A. Johnston and Hanazumi are [illegible] Smith & Nephew Healthcare Ltd.

* COSHH: Control of Substances Hazardous to Health. The term polycellulosic and thermoplastic [illegible] major contributors. The fibres blend [illegible] supply [illegible] when [illegible] smoke [illegible].

6 Probst, Albright & Wolfe [illegible]

8 Nomex: DuPont registered trademark.

8 Flamemaster is a registered trademark of [illegible] Pharmaceuticals.

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Trauma

Measurement of Carbon Dioxide Levels during use of ELSA and the Effect of Venting on these Levels

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Keywords ELSA capnography military carbon dioxide

Abstract

Title
Measurement of carbon dioxide levels during use of ELSA and the effect of venting on these levels

Design
A prospective objective assessment of ELSA use in order to determine whether venting of the ELSA influences carbon dioxide (CO_2) levels

Primary Endpoint
Inspired and expired CO_2 levels

Setting
On board RFA ARGUS during Operation TELIC

Methods
10 volunteers had a baseline of inspired and expired CO_2 levels taken. These levels were measured at one minute intervals during use of an ELSA in 3 conditions – sitting, jogging and jogging with venting

Results
There was no difference in expired CO_2 levels between baseline and use of ELSA whilst sitting. Periodic venting of the ELSA made no difference to inspired and expired CO_2 levels

Conclusions
Venting of the ELSA during use makes no difference to CO_2 levels whether inspired or expired. Therefore venting is unnecessary and potentially wastes valuable time during escape from a smoke filled compartment and adds additional stress to the escapee.

Figure 1

Introduction
The Emergency Life Support Apparatus (ELSA) is a constant flow escape breathing apparatus used in ships of the Royal Navy and Royal Fleet Auxiliary. It is designed to allow a person to escape from a smoke filled compartment by supplying approximately eight minutes of uncontaminated air. This air is contained in a cylinder held against the chest and delivered via a tube to a plastic bag which is placed over the escapees head. The plastic bag has an elastic seal around the neck [Figure 1]

Training pro[illegible] ELSA's are [illegible] into [illegible] intermediate sea survival courses which [illegible] undertaken by all individuals before proceeding to sea. The traditional teaching has instructed the wearer to vent intermittently (exact time not specified) in order to reduce the build up of carbon dioxide (CO_2). During an escape this adds additional time and stress.

It was the feeling of the authors that venting would make little difference to the carbon dioxide levels and thus unnecessary.

Method

A study took place on board the RFA ARGUS during Operation TELIC. After receiving approval from the Local Ethics Committee 11 healthy volunteers were recruited after informed written consent to undertake three separate ELSA runs. One volunteer dropped out of the study on the first run due to a sensation of claustrophobia.

The remaining 10 recruits completed the protocol.

The protocol involved recording a baseline of inspired ($INCO_2$) and end-tidal expired ($ETCO_2$) levels. The levels were recorded by use of an Ohmeda Datex S5 monitor using a side stream capnography sampling line connected to a Heat and Moisture Exchanger (HME) filter which was held between the lips of the subject [Figure 2].

Figure 2

A right angle connector was placed where the sampling line connected to the HME to prevent leaking. The subject was instructed to breathe through their mouth only [Figure 3].

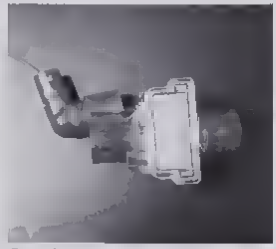
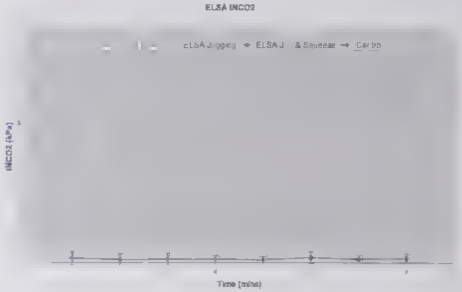


Figure 3

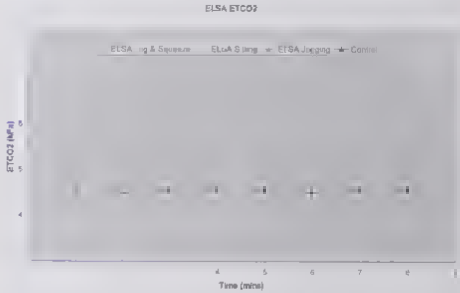
For the first run (sitting) the HME filter was inserted into the mouth followed by donning of the ELSA hood. The air supply was immediately turned on with the valve opened fully and readings of $INCO_2$ and $ETCO_2$ were recorded every minute for the duration of the air supply. When the air supply was exhausted $INCO_2$ and $ETCO_2$ levels were recorded every 10 seconds for a maximum of one minute. The same procedure was followed for all subsequent runs. The second run (jogging) was completed with the subjects jogging on the spot and the third (jogging and squeezing) while performing periodic CO venting. The venting of CO was executed in a standard manner every two minutes: a thumb was placed under the neck seal pulling it to one side and the hood was squeezed using the other hand and arm, expelling the CO.

The subject was withdrawn if the INCO2 ≥ 5kPa or if the ETCO ≥ 9 kPa or if the symptoms of hypercarbia became intolerable.

Multivariate techniques (two way mixed ANOVA) were used to compare the effects of the four conditions (control, sitting, jogging, jogging & squeezing) time and their interaction (if any) on ETCO and INCO. Bonferroni correction was used to adjust for multiple comparisons. A p value of 0.05 was considered statistically significant. One way ANOVA was used to detect differences between the four groups and if significant a Dunnett C post hoc test of multiple comparisons was used to determine where the difference was.



Graph 1



Graph 2

Results

Seven men with age ranges from 31–48 years (mean 35 years) and three women with age ranges from 28-43 years (mean 34 years) were recruited into the study. One male volunteer was withdrawn from the study due to claustrophobia and replaced with another male of the same age.

Control readings for INCO ranged between 0.0 – 0.3 kPa and the range of ETCO was 4.0 – 5.0 kPa (mean 4.5 kPa).

The group donning an ELSA whilst sitting had raised INCO compared with control ($p<0.004$).

There was no difference in ETCO between the group and the control.

There was a significant increase in $INCO_2$ and ETCO2 in the jogging group compared with both the control and sitting groups.

There was no difference in INCO and ETCO between the groups running whether the bag was squeezed or not [Graphs 1, 2].

Symptoms of hypercarbia were minimal and included mild headache and flushing.

Discussion

here were a higher proportion of male than emales and this reflects the personnel imposition of the Royal Navy

There was a significant increase in INCO erween the control and sitting runs which was a indication of CO buildup within the hood he magnitude of this increase was limited by e flow rate of air from the cylinder In contrast iere was no significant difference in ETCO etween these groups despite the increase in NCO_2 and this was thought to be due to an ncrease in minute ventilation

The jogging runs were designed to simulate e exertion experienced during the rapid vacuation of a smoke filled compartment and e subsequent increased cellular CO roduction This intuitively gave significantly creased values of $INCO_2$ and $ETCO_2$ when ompared with both the control and resting roups When exercise was repeated with smoke hood venting there was a visual duction in INCO towards baseline for the first spiration post venting [Figure 4] however the NCO_2 of the second inspiration gives a value low [illegible] there was [illegible] INCO and ETCO [illegible] post venting values

RFA Argus was deployed [illegible] during a period of [illegible] was required to have [illegible] quiet [illegible] in-actioning ELSA available at any time therefore the study numbers were restricted Despite being limited from a numbers point of view it is evident that the results achieved may well warrant a change in teaching practice and at the very least they give credence to a larger scale study on LESA or its projected replacement

Conclusions

This work shows that venting of the ELSA during use makes no practical difference to CO^2 levels whether inspired or expired Therefore in reality venting is unnecessary and potentially wastes vital time during escape from a smoke filled compartment and adds additional stress to the escapee The teaching of venting should be removed from the training syllabus unless other work clearly demonstrates its value

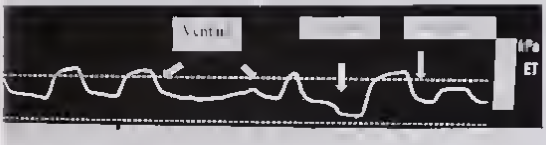


Figure 1

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Trauma

The Role of the Maxillofacial Senior House Officer in Trauma Management

Surgeon Lieutenant (D) E L Southall RN, Maxillofacial SHO at Royal Hospital Haslar and Fort Blockhouse

Maxillofacial surgery is a specialty that has evolved from oral surgery with foundations in dentistry medicine and surgery It concerns the diagnosis and treatment of disease injury and abnormalities of the mouth jaws and face Areas within this specialty include maxillofacial trauma head and neck oncology orthognathic surgery dento alveolar surgery and oral medicine

There are very few house officers in maxillofacial surgery the most junior training grade tends to be a senior house officer (SHO) Whilst a maxillofacial specialist registrar needs to be dually qualified in both medicine and dentistry at SHO level this is not a requirement The majority of the SHOs in oral and maxillofacial surgery are dental graduates only

Within the Armed Forces there are four dental officers currently appointed as SHOs in Oral and Maxillofacial Surgery They complete twelve months working at Royal Hospital Haslar Gosport and Queen Alexandra Hospital Cosham These posts involve provision of care for patients in the hospital setting and at a specialist level in the disciplines of oral and maxillofacial surgery orthodontics and restorative dentistry The On call duties consist of management of maxillofacial in patients and referrals from the accident and emergency department

The cases referred to the On call maxillofacial SHO include facial and oral swellings pain infections trauma and patients with post operative complications Maxillofacial injuries may involve the facial bones the teeth or the overlying soft tissues They can range from small lip lacerations to complicated fractures of the middle third of the facial skeleton When possible these patients are treated immediately and discharged however a significant number of patients require admission

The aim of this article is to provide a b c overview of the initial management o maxillofacial trauma in the accident an emergency department It will focus on th immediate treatment provided and factor determining the need for admission

A survey conducted in 1997 showed tha maxillofacial injuries accounted for over 4% o all attendances to UK accident and emergen departments The main causes of these injurie are assault road traffic accidents accidenta falls sport and industrial accidents Studie have shown assault to be the most commo cause of maxillofacial injury in the Unite Kingdom Whereas in countries such as India Japan and Saudi Arabia road traffic accidents ar the most common source of maxillofacial injury

A patient presenting with maxillofacia injuries is initially triaged and managed by th doctors in accident and emergency Life threatening or other significant injuries an assessed prior to referral to the maxillofaciu SHO Assessment will then comprise a detaile history of the cause of injury any loss o consciousness presenting complaint and thorough medical history The patient is the examined

An extra oral examination consists of a visua survey of obvious injury the systematic palpation of the facial bones a detailed ocula examination and assessment of the cranio nerves The degree of mouth opening and the range of jaw movements are noted Intra orally the teeth the occlusion and soft tissues ar examined Radiological examinations ar carried out that are appropriate for the suspecte injury and clinical findings

The initial management of these patients i determined by the nature and extent of the

urnes and influenced by their age or level of operation The different types of maxillofacial injuries seen in accident and emergency can be roughly divided in to soft tissue injuries dental injuries and fractures of the facial skeleton

Soft Tissue Injuries

Soft tissue injuries resulting from trauma include bruising abrasions and lacerations Isolated simple injuries to the face and scalp tend to be managed by the nursing staff in accident and emergency whereas more severe injuries and those requiring complicated treatment are referred These would include lacerations that are deep and may involve other structures such as salivary glands nerves vessels and embedded foreign bodies

After the exclusion or identification of other injuries the treatment aims are haemostasis and inspection removal of foreign bodies debridement and primary closure Ideally this is done with sutures under local anaesthetic within the accident and emergency department However patients admitted for treatment under general anaesthesia include those whose co-operation may be poor such as young children or mentally handicapped General anaesthesia is also considered for patients with multiple extensive wounds especially where aggressive debridement is required or if surgical procedures are planned for other injuries

In general these wounds are anaesthetised with local anaesthetic mechanically debrided irrigated with saline and closed with simple interrupted sutures The skin is closed with non-absorbable monofilament sutures whereas deep tissues and the intra oral tissues are closed with absorbable sutures

Suture removal is generally recommended in five to seven days and patients are often asked to make arrangements with their practice or general practitioner Other considerations for the post operative management of these patients include their current tetanus status and the possible need for systemic antibiotics Both of these are dependent on the mechanism of injury and degree of potential wound contamination For example injury from animal or human bites would necessitate a course of systemic antibiotics in accordance with local hospital protocol

Dental Injuries

Traumatic injury to teeth and the supporting tissues can present in isolation or in addition to more extensive facial injuries The maxillofacial SHO tends to be involved in most of these cases Dental injuries resulting from trauma include the loss displacement and fracture of teeth which may involve fractures of the alveolar bone

In the accident and emergency department the aims of dental injury management are to account for any missing teeth or tooth fragments identify and prevent potential danger to the airway pain relief and to provide initial emergency dental treatment A detailed history is essential and radiological investigations may be required in addition to the clinical examination Typical views would be extra and intra oral dental views and a chest x-ray if aspiration of teeth or tooth fragments has not been excluded

The treatment of dental trauma varies according to the nature of the patient's injuries their stage of dental development medical history and level of cooperation Emergency treatments that can be administered by a maxillofacial SHO include local anaesthetic the splinting of reimplanted repositioned or mobile teeth the temporary dressing of fractured teeth the removal of loose teeth or fragments that pose an airway risk and the reduction of dento-alveolar fractures

Ideally as with maxillofacial soft tissue injuries this treatment will be provided immediately in the accident and emergency department However for the reasons previously stated some of these patients may require admission and treatment under general anaesthesia After emergency treatment has been provided most patients are referred back to their general dental practitioner

Facial Fractures

Fractures of the facial skeleton are often the result of trauma involving significant force Therefore these patients may have sustained head or cervical spine injuries and will have been assessed for any significant associated injuries After any life threatening injuries have been diagnosed and managed referral can be made to the maxillofacial SHO However once the airway has been secured the treatment of maxillofacial injuries would normally follow any surgical procedures for intra-abdominal

intraoperative [illegible] injury. Then overall management will [illegible] with colleagues in other specialties.

The maxillofacial SHO will conduct a thorough systematic clinical examination as previously described; this should indicate most fractures of the facial bones. Important findings that indicate facial fractures include deformities of the bones, signs of ophthalmic injuries, derangement of the occlusion, sublingual haematoma and altered sensation to the facial skin or lower lip. Mandibular fractures are the most common fracture of the facial skeleton. Radiological views commonly used for the initial assessment of facial bones include occipitomental views, lateral skull, posterior anterior facial bones and dental panoramic tomograph.

The treatment and management of fractures of the facial skeleton is a subject too large to cover in detail for this article. The initial treatment of these patients by the SHO concerns provisional diagnosis, immediate pain relief, prevention of infection and referral to the maxillofacial consultant. Patients will either require admission for emergency surgical treatment or a consultation appointment to review injuries and plan for future surgical or non surgical treatment as necessary. If treatment is indicated it can range from regular analgesics and soft diet to open reduction and internal fixation under general anaesthesia.

Conclusion

The maxillofacial SHO has a significant role in the initial management and emergency treatment of facial injuries resulting from trauma. It is a post that provides experience outside the scope of general dental practice, the opportunity to enhance medical management skills, surgical skills and sit the MFDS examination. This is a postgraduate dental qualification that will facilitate entrance into most training pathways in dental specialisations. Entrance into the oral and maxillofacial surgery training pathway will also require a degree in medicine.

For dental officers in the Armed Forces this is a twelve month post after which they are likely to return to general dental practice. The experience and skills gained during this year will be of benefit in future shore side and operational roles.

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Clinical

Lyme Disease – A Hazard of an Appointment to the United States

Surgeon Commander P J Benton RN, UK Exchange Officer in the USA

INTRODUCTION

Many years ago recruiting adverts stated 'Join the Navy and see the world'. As a dozen that meant not only the possibility of seeing the world but also perhaps encountering at least hopefully only seeing patients who had encountered some of the exotic tropical diseases learnt about many years before whilst at medical school and briefly during the New Entry Medical Officers Course. Prior to joining the Royal Navy in 1986 my only practical experience of exotic foreign diseases had been a few cases of malaria brought back to the wilds of Hampshire by patients returning from visits to family in India. In addition there was a single memorable case of cholera also the result of an extended stay in a remote part of India. Sea time was spent mainly in the Gulf with only a single case of malaria. Even that only presented after a certain military hospital back home in the UK forgot to continue malarial prophylaxis on admitting a sailor medevaced from Mombasa with a crush fracture of a lumbar vertebrae. The cause of accident a particularly steep water slide belonging to a local hotel.

Three years ago when asked whether I would be interested in the exchange appointment to the Naval Submarine Medical Research Laboratory (NSMRL) in Groton Connecticut the thought of exposure to nasty infections diseases was a long way from my mind. How wrong could I be! Those of you with a good knowledge of medical geography will know that the Lyme of Lyme disease is not Lyme Regis but Old Lyme Connecticut USA a small town just a few miles from NSMRL. Coxsackie and Norwalk are not that far distant. Then of course there is the West Nile virus Rocky Mountain Spotted fever babesiosis ehrlichiosis rabies and even a case of malaria reported just outside Washington DC in 2002. In a very short time I became very aware of some of the medical hazards associated with an appointment to the northeast United States the major hazard living in the wilds of Connecticut being Lyme disease.

LYME DISEASE

Background. In 1975 a cluster of cases of arthritis was noted amongst children living in and around the town of Old Lyme Connecticut. Although originally thought to be rheumatoid arthritis the clinical symptoms and local environmental conditions led to the suggestion that the arthritis was probably the result of an infectious disease transmitted by an arthropod. Further investigation revealed that the causative organism was the spirochaete *Borrelia burgdorferi* which is transmitted by the bite of the black legged tick (*Ixodes scapularis*) commonly known as the deer tick. Although only recognised and labeled as Lyme disease in 1977 this is not a new disease as subsequent enquiries revealed that the condition had been known about in parts of Europe since the early 20th century. In the year 2002 the Centers for Disease Control and Prevention (CDC) received notification of 23 760 cases of Lyme disease within the United States 4631 of these cases being reported from Connecticut (population 3.4 million). This compares with only 323 cases of Lyme disease reported in the United Kingdom during the year 20002. Within Connecticut Lyme disease is the second most common notified disease falling someway behind Chlamydia (9 808 cases in 2002) but comfortably ahead of Gonorrhoea (3 241 cases in 2002) and chickenpox (1 821 cases in 2002). Data for chlamydia and gonorrhea which are not notifiable diseases within the USA are obtained from the US Division of Sexually Transmitted Diseases Prevention and are included within the CDC report on notifiable disease. Lyme disease is not a notifiable disease in England and Wales with reporting only required if the infection results from a work related exposure in which case notification is required under RIDDOR. Lyme disease is a notifiable disease in Scotland

with 26 cases reported in the year [illegible]

Clinical symptoms Symptoms [illegible] can be divided into those associated with the initial localised infection early disseminated disease and late disseminated disease

Initial localised infection Between [illegible] and 32 days typically 7 to 14 days after being bitten by an infected tick 70 80% of patients develop erythema migrans often with a characteristic bull s eye pattern The erythema migrans expands over 7 to 10 days and can become as large as 40cm in diameter usually however the rash is only about 15cm in diameter The rash may feel warm to the touch but is not painful with the result that the patient is sometimes unaware of the rash it often being first noticed by a family member Some infected individuals have no symptoms other than the rash but most develop non specific symptoms such as fever headache fatigue and malaise Indeed a small number of individuals appear to have no symptoms and no rash after the initial tick bite

Early disseminated infection Untreated the spirochaetes disseminate from the site of the tick bite by cutaneous lymphatic and blood borne routes with the first signs of the more generalised and serious disseminated infection developing days to weeks after the initial infection This disseminated infection may result in the development of multiple secondary erythema migrans lesions but of far greater significance can affect the musculoskeletal nervous and cardiovascular systems Musculoskeletal manifestations include joint and muscle pain that may or may not be accompanied by joint swelling Neurological manifestations include cranial neuropathy in particular facial nerve palsy peripheral radiculoneuropathy and lymphocytic meningitis Within Europe the most common neurological manifestation is a lymphocytic meningoradiculitis (Bannwarth s syndrome) Fortunately cardiac manifestations are relatively rare but can include myocarditis and transient atrioventricular blocks

Late disseminated infection Weeks or months after the initial tick bite and infection with *Borrelia burgdorferi* if untreated intermittent swelling and pain of one or more joints may occur The joints affected are usually large weight bearing joints such as the knee with approximately 10% of individuals progressing to a chronic arthritis As well as the arthritic symptoms neurological manifestations may present including chronic axonal polyneuropathy or encephalopathy that may result in fatigue sleep disturbance personality change and cognitive dysfunction In a small number of individuals the chronic effects of Lyme disease may result in marked and severe disability

Causative organism The spirochaete *Borrelia burgdorferi* is a helical bacterium 10 25μm long with between seven and eleven flagellae attached at each end Three distinct types of Borrelia have been identified although only *B burdorferi* sensu stricto has been linked with Lyme disease within the United States Within Europe not only *B.burdorferi* sensu stricto but also the closely related *Borrelia B garinii* and *B afzelii* have been identified as causing Lyme disease In Asia only *B garinii* and *B afzelii* have been identified in patients with Lyme disease The different types of *Borrelia* may explain the different pattern of disease between geographical areas with arthritis more commonly experienced in the United States than in Europe where neurological symptoms tend to predominate

Vector of transmission Transmission to humans is by the deer tick in the northeastern and north central United States the vector is the black legged tick *Ixodes scapularis* whilst on the Pacific coast the vector is the western black legged tick *Ixodes pacificus* Less is known about specific vectors within Europe although the ticks *Ixodes ricinus* and *Ixodes persulcatus* are probably vectors The deer tick has a two year life cycle and progresses through three distinct life stages these being larvae nymph and adult

Larvae During spring the female adult deer ticks lay eggs that hatch during the summer months into larvae These larvae are less than 1mm in size and remain on the ground until a small mammal or bird brushes against them The larvae then attach themselves to the host and over a period of a few days feeding becoming engorged with the host s blood The deer tick eggs and hence larvae that hatch from them are not infected with *B burdorferi* but if the host the larvae feed from is infected

with *B burdorferi* then the larvae [illegible] infected at this time After feeding most larvae drop off their hosts molt, and by autumn become nymphs Because the larvae only feed once and they can only become infected by feeding on an infected host the larval stage cannot transmit *B burdorferi* to humans or their pets

Nymphs: The nymphs remain inactive during the cold of winter but with the warmth of spring become active and seek out new hosts Positioning themselves on low vegetation they latch onto small mammals or birds that pass by Feeding for 4 5 days the nymph becomes engorged with blood and if the larvae had been infected with *B burdorferi* when it fed then the nymph may infect its host with *B burdorferi* If not then if the nymph's host is infected with *B burdorferi* the tick has a second chance to become infected Up to 25% of nymphs in endemic areas are infected with *B burdorferi* and although small mammals such as the white footed mouse and birds are the preferred host the human host is perfectly acceptable to the nymph Recent research suggests that the tick needs to remain in contact with the host for between 1 2 days to effectively transmit *B burdorferi* However because of their small size (1 2mm diameter) and relatively painless bite they can easily go unnoticed until fully engorged by which time they may have infected their host Once engorged the nymph detaches from its host and molts into an adult Peak activity for nymphs in the northeast United States is between May and July

Adult: The adult deer tick actively seeks new hosts by climbing up tall grasses and small plants to a height of approximately 1 metre above the ground Here the adult tick rests with its front legs raised waiting to latch onto a passing deer Although the deer is the preferred host other large mammals including humans cats dogs and horses can act as hosts If by winter a host is not found the adult ticks seek shelter under leaf litter where they remain inactive until the following spring when the increase in temperature enables them to resume their search for a host Once a host has been found the adult ticks start to feed The pattern of feeding differs between male and female ticks Male ticks feed intermittently whilst female ticks that are successful in [illegible] is [illegible] [illegible] a week Mating [illegible] either on the host or whilst awaiting a host The female tick after having fed will complete the two year cycle by laying approximately 3000 eggs in leaf litter during early spring In the northeast United States over 60% of adult ticks are infected with *B burdorferi* Peak activity for adult deer ticks is during the autumn months and early spring

Diagnosis and treatment: In endemic areas such as the northeast United States any rash following tick bite is considered to be Lyme disease until proved otherwise The current recommended treatment is doxycycline 100mg twice daily for 3 weeks[4] For patients in which doxycycline administration would be inappropriate children under the age of 9 and pregnant or breast feeding women amoxicillin or cefuroxime are suitable alternative antibiotics If penicillin allergy is of concern then erythromycin is an effective alternative Confirmed tick bite alone in the absence of rash is sufficient to warrant prophylaxis in the form of a single 200mg dose of doxycycline taken within 72 hours of the tick bite[5] Diagnosis in the absence of a rash is more complex and is based upon time of year history of a tick bite symptoms and exclusion of other disease processes that may produce similar symptoms Biopsy of skin lesions rarely reveals spirochaetes and so is of little use as a diagnostic tool Antibodies to the spirochaete are produced but it may take many weeks until titres are sufficiently raised to permit reliable detection To complicate matters early administration of appropriate antibiotic therapy may further reduce antibody levels Because of this antibody tests are of greatest benefit in the diagnosis of Lyme disease in individuals who present late with symptoms suggestive of disseminated disease The Food and Drug Administration (FDA) currently approve two blood tests for the diagnosis of Lyme disease These are the Previue B which is a rapid test that can provide a result within one hour and the C6 Lyme Peptide ELISA (enzyme linked immunosorbent assay) that takes longer to provide a result but is very sensitive and specific to Lyme disease Following detection of antibodies to the Lyme spirochaete by one of these methods confirmation is usually made by use of the Western blot technique In addition to blood tests it is sometimes possible to identify

Antibodies against specific material from the spirochaete in the cerebrospinal fluid of individuals with CNS symptomatic Lyme resulting in an Lyme disease. The genome of *B.burdorferi* has been sequenced and this may result in improved methods for both the diagnosis and treatment of Lyme disease. Finally it must be noted that living with Lyme disease does not appear to result in immunity from further infection.

Prevention To protect against infection by *B.burdorferi* it is necessary to avoid being bitten by infected deer ticks and as such the most basic preventative measures are identical to those used to protect against any disease with an insect vector. Skin exposure should be minimised and this can be achieved by wearing long sleeved shirts that fit tightly at the wrists plus long trousers. Shoes not sandles should be worn to ensure that the foot is fully covered and trouser legs should be tucked into long socks. A hat may provide additional protection but as contact with the deer tick will be primarily from brushing against undergrowth or walking through leaf litter is not essential. Light coloured clothing is recommended as it enables the deer tick which is black in colour to be more easily spotted and removed. Clothing can also be sprayed with an insecticide such as permethrin or an insect repellent DEET (N,N-diethyl-M-toluamide) being the repellent of choice. DEET because of its very low toxicity can be sprayed directly onto skin although application has to be repeated every few hours as its protective effect is quite short lasting.

Within the northeast United States housing extends into woodland areas and deer are frequent garden visitors. The concept of wearing protective clothing throughout the hot humid summers is an unwelcome thought and so attempts are made to tick proof gardens. This is achieved by ensuring that a barrier exists between the surrounding woodland and the house across which the tick cannot cross. Closely cut grass can act as an effective barrier as it provides little shelter for the tick. In addition application of insecticides at the boundary between woodland and garden will reduce tick numbers. In some areas widespread spraying of wooded areas during the spring and fall has been carried out and has been shown to markedly reduce the number of ticks. However there are financial, environmental and health concerns with regard to these widespread spraying programmes. An alternative strategy adopted in some areas is to introduce the insecticide into feed left for both deer and the small rodents who are known to be carriers of *B.burdorferi*. In one such programme the number of deer ticks fell by 80% in the first year and 97% by the second year. Pets should also be regularly treated with an anti flea/tick preparation such as fipronil the active ingredient of Frontline™. Fipronil is a highly active broad spectrum insecticide from the phenylpyrazole family that targets and blocks the insects GABA receptors. Insect GABA receptors are far more sensitive to fipronil than mammalian GABA receptors: one study demonstrating that cockroach GABA receptors are 59 times more sensitive to fipronil than rat GABA receptors. For this reason fipronil is not toxic to mammals at doses that are lethal to insects.

Tick removal There are many techniques described for the removal of ticks including burning them off with matches and smothering with petroleum jelly! However there is only one correct mechanism that will ensure complete removal with minimum risk of the tick being crushed and injecting material including possibly *B.burdorferi* into the host. The correct technique requires a pair of fine tweezers with which to grasp the mouthparts of the tick and gently pull it from the host taking care not to squeeze the tick's body.

SUMMARY

Lyme disease is just one of the many tick borne diseases to be encountered within the United States that can affect humans. To the visitor who confines their time to major conurbations the risk of contracting Lyme disease is minimal. However anyone planning a hiking trip during tick season must take precautions to prevent being bitten and possibly infected. For those of us who live within an endemic area the shower after a days gardening is not just to remove sweat and dirt but also an opportunity to check for and if necessary remove any ticks that may have chosen a human host. Fortunately the liberal use of insecticide around our house combined with one of our cats single pawed attempt to eliminate the local white footed mouse population appears to have been effective in reducing the tick count.

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Clinical

To transfuse or not to transfuse. The Pathophysiology of anaemia

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Up until 1985 standard transfusion practice in the perioperative period was to aim for a haemoglobin level of greater than 100 g l⁻¹ and a haematocrit of greater than 30%. Patients would be transfused in the perioperative period in order to achieve these levels and little thought would be given to the potential hazards of blood transfusion. AIDS then became part of the clinical scenario and the threat of transmitting disease by blood transfusion became a very real fear for clinicians. The viruses that cause hepatitis B, hepatitis C and AIDS have now been identified and in each case effective tests have been developed to detect and exclude blood donations that could transmit these infections to a recipient. The risk of becoming infected by these viruses as a result of transfusion is now very low (1). However some patients transfused before these tests were available have suffered very serious consequences as a result of these diseases. There is also evidence to suggest that transfusions affect the immune system and make postoperative infections and recurrence of cancers more likely (2,3). This has prompted a rethink of transfusion policies with the resultant transfusion trigger that is now generally accepted is a haemoglobin level of 80 g l⁻¹ and a haematocrit of 25%.

Variant Creutzfeldt Jacob disease (vCJD) was first described in 1996 in the UK. Evidence suggests that vCJD in humans is closely related to bovine spongiform encephalopathy (BSE) and the disease is presumed to be acquired through the ingestion of infected foodstuffs. The current incidence of new cases is 12-15 patients per year. The number of individuals incubating the disease is unknown. There remains a possibility that vCJD may be transmitted via blood and blood products. As a result of this, several countries including USA have decided that people who have spent periods in the UK before 1996 cannot donate blood (4). Were it to be confirmed that vCJD could be transmitted by blood transfusion there would be a critical shortage of donor blood. As a result of the potential short supply of blood in the future and the increasing fear of transmitting diseases, hospital transfusion departments may be less generous with their blood supplies and require greater justification for transfusions than is currently the case. Clinicians decision making may be assisted by a full understanding of the pathophysiology of acute anaemias in association with an understanding of the individual patient's abilities to utilise the compensatory mechanisms. This requires an understanding of oxygen delivery and consumption at tissue level in order to establish minimum haemoglobin levels below which oxygen deprivation will cause organ damage.

Oxygen delivery and consumption

The haemoglobin level defines the oxygen carrying capacity of each individual patient. In reality it is the arterial oxygen content (CaO_2) that is of the most interest. It is defined as the millilitres (mls) of oxygen contained in 100 ml of blood and can be calculated as follows:

$$CaO_2 = (Hb \times 1.34 \times SaO_2) + (0.003 \times PaO_2)$$

The rate of oxygen delivery (DO_2) is easily calculated from the product of oxygen content

d cardiac output [illegible]
l/min in a n n [illegible]

$DO_2 = CO \times C_{a}O_2$

This simple calculation highlights the adequacy of previous transfusion practices that ly looked at the haemoglobin levels The diac output is equally important for oxygen ivery

The oxygen consumption (VO) can be culated as a product of cardiac output and the ference between arterial and venous oxygen ntent

$VO_2 = CO \times (CaO \quad CvO_2)$

Normal oxygen consumption under basal ditions is 250 ml/min which appears to allow ignificant margin of safety before oxygen nand outstrips supply However this situation omplicated by the fact that blood flow is not same to all tissues and whole body asurements may fail to reveal critical levels of ional ischaemia

T e **pathophysiology of isovolaemic anaemia**
ere are four compensatory mechanisms that nir when blood volume is maintained but matocrit is reduced (isovolaemic anaemia)

Increase in cardiac output

ince oxygen delivery is dependent on both ardiac output and arterial oxygen content increasing cardiac output can compensate for a ddaction in content As the red cell mass is educed, the blood viscosity is lowered and his alters the flow characteristics and lecreases the afterload of systemic vascular esistance In turn this allows an increase in troke volume which is primarily responsible or an increase in cardiac output Over a wide ange of haematocrits isovolaemic aemodilution is self correcting Oxygen lelivery remains constant between aemalocrits of 30-45% and transfusion at hese levels is therefore not indicated Cardiac utput can increase to 180% of normal with aematocrits of 20% The ability to increase ardiac output in response to anaemia depends on the age and cardiac status of the individual atient and also whether the anaemia is acute or chronic

2 Redistribution [illegible] by organs with higher extraction ratios

The extraction ratio for any tissue is oxygen consumption divided by oxygen delivery Globally the body extracts 250 ml of the 1000 ml delivered or 25% The mixed venous saturation represents the remaining oxygen (75%) There is a considerable range of extraction ratios between vascular beds with the heart extracting 55 75% under basal conditions In contrast the kidney and skin which receive a larger proportion of blood flow in relation to their relatively low oxygen demands only extract 7 10% The heart is the organ which is most vulnerable to isovolaemic anaemias because not only is the extraction ratio high in basal conditions but the oxygen consumption will increase as a result of the compensatory mechanism of increasing cardiac output

3 Increase in extraction ratios by some vessel beds

This compensatory mechanism occurs when the haematocrit is reduced to 25% and global extraction ratios increase with a consequent drop in mixed venous oxygen saturation One study has shown that when the haematocrit drops to 15% the whole body extraction ratio increases to about 50% with a drop in mixed venous oxygen saturation to a similar level (5) Organs with higher extraction ratios under basal conditions such as the heart and brain cannot appreciably increase their oxygen supply with this mechanism

4 Alteration in the oxygen binding of haemoglobin to allow oxygen delivery at lower tensions

When anaemia develops slowly the affinity of haemoglobin for oxygen is decreased by the accumulation in the red blood cells of 2,3 diphosphoglycerate (2,3 DPG) At haemoglobin of 90 g l red blood cells begin to synthesise 2 3 DPG which shifts the oxygen dissociation curve to the right and improves the ability of haemoglobin to unload oxygen at lower oxygen tensions As the anaemia worsens so this accumulation of 2,3 DPG increases This compensatory mechanism is not immediate and takes 12 36 hours for 2,3 DPG to accumulate in the cells

MCQs – Answers

1 Concerning blood transfusion
(a) False, (b) True (c) True (d) True (e) False

(a) Citrate within stored blood chelates ionized Ca to prevent coagulation Massive transfusion can lead to hypocalcaemia and tetany

(b) Bacterial and viral infections can occur including HIV Hepatitis B and Hepatitis C CMV is common but only a threat to the immunocompromised and neonates

(c) Microaggregates consist of degenerated platelets and aggregates of fibrin and have been implicated in the pathogenesis of pulmonary insufficiency and acute lung injury

(d) Thrombocytopaenia

2 Concerning 2,3 diphosphoglycerate (2,3 DPG)
(a) True, (b) True (c) False (d) True (e) False

(a) 2,3 DPG is produced by glycolysis via the Embden Meyehof pathway

(b) increased 2,3 DPG moves the P50 of the oxygen dissociation curve to the right thus off loading oxygen at lower tissue oxygen tensions

(c) It binds strongly to the beta chains of haemoglobin

3 Immediate compensatory mechanisms of acute anaemia include
(a) True, (b) False, (c) True, (d) False, (e) True

(a) Moving the P50 to the right allows off loading of oxygen at lower tissue oxygen tensions

(b) In acute anaemia oxygen extraction increases resulting in a reduced mixed venous oxygen saturation

(c) Acute anaemia leads to activation of the sympathetic nervous system with tachycardia and increased stroke volume

(d) There is an increase in 2,3 DPG but it is not an immediate response and takes 12 36 hours to occur

(e) There is redistribution of blood to organs with higher extraction ratios via vasoconstriction of less vital areas eg the splanchnic circulation and skin

4 In relation to oxygen delivery (DO_2)
(a) False, (b) False, (c) False; (d) True; (e) True

(a) 1 34mls (Hufner constant) of oxygen combines with 1g of haemoglobin

(b) Increasing heart rate shortens the time spent in diastole and thus can reduce oxygen delivery to the heart

(c) Resting oxygen delivery is a product of cardiac output and arterial content of oxygen Cardiac output is a product of stroke volume and heart rate

(d) Hyperthermia increases metabolic rate and if oxygen delivery remains constant there will be increased oxygen extraction The P50 of the oxygen dissociation curve moves to the right with increasing temperature

(e) The brain takes 15% of the cardiac output 750ml/min or 0 75l/min The CaO_2 is on average 200ml/l Therefore DO_2 to the brain = 0 75 x 200 or 150ml/min

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Book Reviews

lth as International Politics
ombating Communicable Diseases in the
Baltic Sea Region
Geir Hønneland and Lars Rowe
hgate Publishing Limited 2004 119pp

th the collapse of the Soviet Union a major
bilising force was removed from central and
tern Europe Newly emerging and re-
merging infectious diseases such as HIV/AIDS
l tuberculosis presented major public health
blems to both Russia and the Baltic states
berculosis rates in Russia grew from 30 per
000 in the early 1990 s to approximately 80
100 000 cases a decade later with a
proportionate growth in the cases of multiple
g resistant tuberculosis (MDRTB) In 1999
) cases per million of HIV/AIDS were
orded in Russia with estimates of a doubling
prevalence by 2000 In the West there was
wing concern that the failure to contain and
ntrol these epidemics might contribute to the
ial and political destabilisation of the former
viet Union and the Baltic States Russia was
an becoming the sick man of Europe
mmunicable diseases demonstrate no respect
national boundaries The realisation that
ection spreads not only from person to person
from one country to another has rightly
pelled issues of public health on to the
ernational political agenda The theoretical
ept of health as a global public good in
ch improvements in health in one region
tefit the global community as a whole
vide the political impetus from which
tatives such as the Task Force arise The
rwegian led Task Force of eleven nordic
untries was conceived in April 2000 with the
n of developing and initiating a joint plan to
rance disease control throughout the region

Health as International Politics Combating Communicable Diseases in the Baltic Sea Region by Hønneland and Rowe provides an
lightful account of the activities of the Task
rce since its creation The book discusses the
ial and political context in which the Task
rce was realised and provides an account of
establishment and structure of the
anisation The six key areas addressed by the initiative were public health surveillance systems tuberculosis HIV and sexually transmitted diseases antibiotic resistance incorporating hospital infection control primary health care and prison health care Utilising material gained from interviews with those involved in the Task Force at political administrative and grass roots levels the authors explore the reaction to and impact of the projects sponsored by the Task Force

The structure of the Task Force evolved with the aim of avoiding wearisome inter state bureaucracy time consuming voting procedures and slow funding mechanisms Programme Groups supervised the implementation and funding of 729 projects in the six key areas of public health need throughout Russia and the Baltic states

The way in which the collaborative efforts of the Task Force were viewed in different regions and countries provide a fascinating glimpse of the beliefs and perceptions of the medical establishment in the post Soviet era and of Russian society in general The ideas and principles introduced by the Task Force were largely embraced with enthusiasm the majority of projects being welcome initiatives in areas of substantial under investment However there was the inevitable clash of cultures in some instances The dichotomy of modern Russian political ideology in which some embrace the market economy of the capitalist West whilst others become increasingly disenchanted with all that is Western believing the cold war has simply evolved into a cold peace goes far to explain the varying levels of assistance and cooperation experienced by the Task Force in its Russian projects The authors contrast these perceptions with the more traditionally pro Western outlook of the Baltic states which when combined with the generally healthier state of their health care infra structures ensured a more fertile ground on which to sow the progressive ideas advocated by the Task Force

This book is an account of the origins and activities of the Task Force and the difficulties and successes which it encountered The strength of the discursive is that it is drawn

directly from the testimony of task force participants both supporters and critics Evaluation of the projects undertaken by the Task Force and in particular their long term impact and sustainability are issues which can only be addressed in the fullness of time However the success of the Task Force initiative in politicising emerging public health issues in Russia and the Baltic states and in promoting international cooperation and collaboration in the field of communicable disease control cannot be doubted

Surgeon Lieutenant Commander S J Dixon is currently a Year 4 SpR in the Hospital for Tropical Diseases, London

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Lay Involvement in Health and Other Research
by Alan Earl Slater Radcliffe Medical Press Ltd 2004 ISBN 1 85775 847 1

I do not get much time or have surplus energy to read whole books anymore Life is so hard! So when the *opportunity* to review this book was given to me by the Commodore I stayed away from telephone calls and reports with anticipation of the luxury to read the whole book at home

The book is a 145 page soft back published by Radcliffe Medical Press complete with a logo on the back denoting Oxford spires The primary purpose of the book is to provide some vignettes and practical guidance for healthcare professionals who may have lay members involved in their research There are twelve Chapters of which I found only two of interest Research Ethics Committees (Chapter 10) and Human Rights (Chapter 11)

There was no mention or explanation of how different research methodologies are better than one another in terms of making a specific causal statement relating to a hypothesis All of the individual Chapters have references and further reading Many of the references are duplicated across Chapters

Chapter 9 Regulation of Patient Data Caldicott Guardians consisted of one and a half pages of reasonable text and a table The two appendices were the most useful read which in turn leads the reader to a list of informative web sites such as (www.dataprotection.gov.uk) The Data Protection Act 1998 Declaration of Helsinki (www.wma.net) The Association of research Ethics Committees (www.arec.org.uk) etc Inch summary the writing style of the book was difficult to get used to and it was not the most informative book I have read

Dr Shaun Kalmunsiar HSTATs Institute of Naval Medicine

Letters to Editor

20 July 2004

Dear Sir

My son read me Surgeon Commodore Rattrell's article about St Dunstans in the most recent JRNMS

Having had personal experience of St Dunstans I would like to add my support for the organisation I served in the RAF during the Second World War and developed macular degeneration four years ago I became a member of St Dunstans and have benefited enormously from their care compassion and consideration Their facilities at Ovingdean for sports activities and holidays and their professional and caring service are truly exceptional and have made a significant difference to my family and I am adjusting to my condition

Yours faithfully

D PARRISH DFC

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Service News

Blood Red Dinner 2004

irst Sea Lord Admiral Sir Alan West delivered this speech at the dinner of the Royal Naval Medical Club

am very grateful to MDG(N) for his welcoming emarks and for the kind invitation to dine with ou tonight I know that the Blood Red Dinner as a history stretching back to the early years of he last century and I am delighted to be here as irst Sea Lord in such a large and distinguished ompany of medics I promise not to feel a vinge in my back and seek some free medical dvice!! There is of course a strong historical ink between the Medical and Executive ranches XO's have traditionally undertaken he duties of medical officer in ships where no MO was borne

I would also like to add my thanks to the staff r an outstanding dinner It was PG Wedcheuse ho said that alcohol was a food well in advance f medical thought and we have certainly njoyed excellent food and wine this evening

I must also just say briefly that I think MDG(N) somewhat underplayed the sporting rowess of the RNMS in his speech two ARNNS officers in the team which lifted the adies Inter Services Fencing Trophy for the rst time since 1957 is no mean achievement MA Gilbert the RN Individual Golf hampion for the second year running and was elected to represent the RN in the Inter Services olf Championship which we won last week nd providing half the RN Women's Tennis eam Out of interest the RN has now won the ular-Services Golf Championship 3 times in the st 5 years and the first of those wins in 2000 as our first win in 68 years!

In talking to and about the naval medical ranch tonight I am conscious of the fact that he branch extends well beyond doctors in the aditional sense to all components of the edical profession doctors dentists nurses edical services officers MAs and medical hnicians I am also well aware of the huge ontribution that the branch makes to the hghting effectiveness of the RN People remain the Navy Board's top priority after operations and whilst the manners recruiters and trainers make sure that we have the right number of suitably qualified people in the right jobs to allow us to be fully effective as a fighting service there is little point in having those people if they are not physically fit to carry out their jobs

I would like to pay tribute here to the full range of medical service support that your branch provides from the more dramatic treatment of battle casualties in conflict to secondary care and the day to day physical and mental well being of our people – he it coughs and colds strained backs pulled muscles or the stress that is inevitable in an organisation that works as hard and carries out as vital a role as we do Our sailors remain the greatest single factor but they have to be fit to fight in order to be effective I am responsible for the fighting effectiveness efficiency and morale of the service and I cannot do this without your invaluable support

The medical branch in the RN of course has a long and distinguished history The health of sailors and the impact that poor health could have on the human resources available to fight a ship have been a concern to COS for centuries

For example in ships operating off the coast of West Africa and South America yellow fever produced a terrible mortality and the whisper of Yellow Jack brought terror to sailors In particular yellow fever had a depressing effect on morale Convinced that it was contagious they refused to help nurse the sick for there were no sick berth staff in those days and nursing was done by volunteers among the crew Naval surgeons to their credit did not subscribe to the theory of contagion How heroically they struggled is illustrated by the story of Dr

McKinnel of HMS SYBILLE off Lagos The ship's company had contracted yellow fever from HMS EDEN and 101 men had died out of a complement of 160 Morale was so low that McKinnel believed that many were dying of sheer fatalism when they perceived a symptom

He therefore took a measure of black vomit from a patient who was dying of the disease went down to the gun room about half past twelve o clock returned with a wine glass Mr Green the officer of the forenoon watch was then going below when he called him over and filling out a glassful of the black vomit asked him if would like to have some of it being answered in the negative he then said Very well here is your health Green and drunk it off and walked around the deck until it was clear to all that it was no trick The improvement in morale had a dramatic effect on the death rate

The account concluded with the statement

It is almost unnecessary to add that it did not impair his appetite for dinner nor did he suffer any inconvenience from it afterwards

Next year we celebrate the bicentenary of Nelson and Trafalgar and the skill and success of naval surgery which developed greatly during Nelson's day and the ability of Naval medics to give the best of contemporary medical care to a ship's company contributed to the success of the Royal Navy during this period and its total mastery of the seas in the years beyond

As today much of what a surgeon treated would have been the day to day maladies and sicknesses of the time and sailors could have considered themselves fortunate in having their own GP on hand In action the greatest number of casualties occurred from the splinters caused by the impact of a cannon ball and burns and flash burns were also common injuries on the gun deck The most frequent surgical operations to be performed in action were of course amputations of the limbs and it is in these cases that we can look back with most awe at the skill and success of naval surgeons given the lack of anaesthetics and the fact that post operative infection was accepted as a matter of course

The process of amputation was I am told the same as today i.e. control of the artery cutting the muscle tissue to the bone pulling back the muscle to reveal the bone sawing the bone releasing the muscle tissue and ligating the severed arteries Forgive me for going into this level of detail so soon after we have eaten – but I feel that I can do so tonight on the grounds of professional detail and interest The impressive thing certainly to me as a non-medical man was the fact that a competent surgeon of the time would complete all this in considerably less than two minutes

They knew that given a skilful and experienced surgeon the quicker these operations were completed the better chance of a full recovery for the patient The Medical Branch was also ahead of its time in having women at sea We may think that this is something new but a large number of women did go to sea in the 17th and 18th centuries often mature women who were the wives of Petty Officers and were often employed in sickbays

Enough of the past I welcome the optimistic state-of the union address that MDG(N) has just made but you will not be surprised to hear me say that the change that we are all undergoing in the service is a continuous process – and this poses a challenge for all of us In order to put this into context I would like for a few minutes to look at what we are doing as a service and why it remains as important and relevant as ever

First the maritime domain is still vital to the UK – and there can be few more appropriate places to make that statement than here at Greenwich The success and prosperity of this country has been linked to the sea for generations Sir Walter Raleigh made the observation that **"Whosoever commands the sea commands the trade; whoever commands the trade of the world commands the riches of the world, and consequently the world itself"**

We may no longer be in a position to rule the world but we remain an island nation something which can be forgotten in these days of easy cheap and rapid worldwide travel The vast majority – 95% by volume – of the UK trade is carried by sea The maritime commercial sector in Britain employs more than a quarter of a million people and has an annual turnover in excess of £37 billion – more than the agriculture and aerospace sectors of the

nomy combined We export more than 25% everything we produce and £250 billion rth of that is transported by sea When you nsider that it costs only £1 to ship a cased eo recorder from Shanghai to Southampton it asy to understand why maritime trade is and I remain pre eminent

The Royal Navy s role continues to evolve to main relevant as the global political and nomic background changes We have moved from the Strategic Defence Review in 1998 progressed from the cold war static defence ture to expeditionary warfare where loyability flexibility and sustainability are Whilst this was a significant change for the er 2 services it has been easier for us as the has traditionally had an expeditionary role – last time that the British Army campaigned cessfully without maritime support was at the le of Culloden in 1746'

Our emphasis has shifted from deep water anti marine warfare to littoral operations olving power projection on land We have eloped the maritime contribution to joint rations and the utility and versatility of ritime forces has been displayed many times r the past few years notably in Operation liset in Sierra Leone Operation Veritas in hanistan and Operation Telic in Iraq It is rth remembering that Op Telic demonstrated lost every inherent strength of maritime ies The ability to deploy forces early into atre and keep them there for an extended iod without host nation support issues duced a powerful message before the conflict

N involvement was key in the warfighting se from the submarine launched Tomahawk kes through to mine counter measures rations and of course the major role of the phibious forces The success of the initial phibious assault the first helicopter borne ault since Suez backed up by NFS operating hallow waters and supported by the RFA was cial to the success of the campaign On the dical side the benefits of sea basing allowed to provide UK hospital standard medical ilities without reliance on NHS close to the at line for both military and civilian ualties the latter group including children

The ability professionalism and flexibility of al medical personnel to deal with a wide range of injuries and medical challenges were shown once again I am aware of the difficulties faced in planning constraints and the provision of resources for civilian casualties of all ages I understand that DMSD is scoping this issue being very aware of the difficult position that you could be in

Of course it is not just in major operations that medics provide in essential service One only has to look at the events in the Caribbean of the past fortnight to see the vital role played by medics Hurricane Ivan devastated Grenada and the Cayman Islands and the medics and first aid parties in Richmond and wave rider provided much needed medical support in the hospitals and the wider community This is just one recent example – there have been many more

Looking to the future one of my main tasks is to ensure that the Royal Navy of 2015 and beyond will be in the best possible shape I am confident that we can achieve this with our vision for the future navy building a versatile maritime force in which flexibility and the ability to swing from one role to another is paramount It is a truism that the war you fight will be different from the one you planned for and versatility is the key It must be built into our equipment and our people allowing us to swing between roles from disaster relief through peacekeeping to high intensity warfighting

Following the review of SDR post HSA the publication of the new chapter in 2002 focussed our thoughts on the operations and activities that the UK s armed forces were expected to undertake in the face of the asymmetric threat that international terrorism poses The maritime capabilities required for operations such as this are likely to become increasingly useful.

To deliver this we have a forward construction programme which is one of the best I can remember and it is being delivered The centrepiece and my clear priority will be the next generation of aircraft carrier 2 ships the Queen Elizabeth and the Prince of Wales of about 60 000 tons the biggest the RN has ever had – which will increase our ability to mount power projection and expeditionary operations The introduction of the new carrier will mean that we all will have to work closely with our RAF colleagues at every level and for the

medical branch there will be significant aviation medicine challenges to meet

Our amphibious capability is also growing with the introduction into service of 2 new assault ships 4 large landing ships and 6 RO RO ferries The steel has been cut on the first 2 type 45 destroyers and in 4 years time these ships will be providing us with the best force protection capability in the world and the astute class submarines following on a year or so later will ensure that we maintain that most deadly naval capability in our inventory In the underwater medicine area, Project Alamanda will require major work by the Institute of Naval Medicine and Astute will place further demands on the stretched and stretched MA(SM) cadre It is no exaggeration to say they have a key role in keeping the submarine force at sea

I am certainly not saying that all is rosy We have of course recently made the announcement of force level reductions as part of the SR04 settlement Whilst we have lost 6 DD/FF and 6 MCMVS the emphasis is on modernisation of the fleet to more effectively meet the threats of today and tomorrow We have certainly had to reassess every aspect of what we do in order to ensure that the ambitious modernisation programme that I have just outlined is both affordable and achievable

A review of the number scale and concurrency of the sort of operations that we are likely to undertake has allowed us to reduce hull numbers and while it is never good news to lose ships we need to be careful not to measure strength in terms of numbers of ships but in terms of capability and the military effect that we can bring to bear The joint casualty treatment ship JCTS has the full support of the NAVY and we are looking to ensure it is fully funded to proceed in the planned timelines

The medical branch is going to be faced with dealing with these changes as well as adapting to different healthcare training and delivery structures in the NHS all the while adapting and meeting challenges in the military area I am glad to hear that the RNMS is taking forward nurse practitioners and physicians assistants recognising as the NHS has that it isn't only doctors who actually deliver healthcare I also welcome MDG(N)s proposals for naval healthcare aggregation bringing together healthcare into one management structure but in terms of specialty and management This can only improve operational capability and at the same time deliver a structure more capable working in co operation with the Defence Medical Services directorate and other services

Change medical technological and strategic may be a constant but an essential constant our great naval tradition remains our people military and civilian They retain the core professionalism and dedication which I always made Britain one of the world's greatest seafaring nations with a navy ready to fight and win You as members of the RN Medical Branch are part of that tradition and you play a key role in the health well being and effectiveness of your patients and colleagues In a world of change long may that remain the same

Ladies and gentlemen thank you again for inviting me to join you tonight I would like to conclude by asking you to rise and join me in raising your glasses to the health of the Royal Naval Medical Club

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Service News

Blood Red Dinner 2004

Surgeon Rear Admiral M A Farquharson-Roberts delivered this peech at the dinner of the Royal Naval Medical Club

irst Sea Lord Sir Surgeon General Deputy hief of the Defence Staff for Health Fellow iGs honoured guests ladies and gentlemen elcome to the Blood Red Dinner the annual inner of the Royal Naval Medical Clnb

I would like to take this opportunity to thank l the guests of the Clnb who in many and arious ways have given help guidance and ncouragement over the years and I know that na will continue into the future

As ever the Royal Marine band have been bsolutely splendid In view of their war role as ostually handlers adjudged by neutral well AF observers to be the best in theatre during peration Telic they must by now in reality onorary members of the medical branch

Our thanks also to m ntre d hotel and head hef and their teams to Peter Culwick the club ecretary for a lot of hard work organising this vening and to everybody else who has ontributed to making this such a splendid vening

After my father left the Marines he was rdained and I was introduced to the delights of te rectory pew the one at the front of the hurch My brother and I were tasked to time his ermons after 10 minutes we were to tap our atches in line of sight of the pulpit I wont chieve that tight discipline but you will be glad hear that I m aiming close!

Less than a year ago when I became MDG I ook over a healthy medical service with a very igh morale following Operation Telic The ranch had performed extremely well at every vel and I recall everybody s delight at last ear s dinner for us to be told so in what I can nly describe as very direct terms by ommander in Chief Fleet However I am nzzled as how the English language has taken reference to canine wolfhan dnet appendages to be praise but high praise it was

That high performance is not confined to the operational arena The Royal Naval Medical Service has continued to perform extremely well across the piste

The high quality of the research work put forward for the Gilbert Blane medal jointly awarded by the colleges of physicians and surgeons has been repeatedly remarked on by those august bodies Our medical officer trainees adjudged by their RITA reports and performance at higher examinations and indeed the award of higher degrees are well above the average Also noteworthy is how our medical officers gain management positions in the parent trusts in competition with their NHS colleagues our people hold a disproportionate number of posts and in passing it is noteworthy how many RNMS officers in general do likewise when they leave the service

QARNNS and MS by no means lag behind and I have been struck by how well they at all levels compare with their NHS colleagues A Petty Officer has been invited by the trust in which she works to apply for a G grade post for those not familiar with the arcane NHS system that s effectively a ward sister s post and a Lieutenant has been appointed to an H grade

The quality of the submissions for the Sick Berth Petty Officers Efficiency Medal is outstanding and it is extremely difficult to select only one The professional achievements are not only directly medical members of the branch seem to pick up MSes and MBAs at a steady and encouraging rate and we must not forget that a naval medical officer won the IQ competition test the nation earlier this year

The RNMS also participates fully in service

sport particularly good achievements in fencing golf and tennis and three in the current RN rugby squad I have to say that for a branch of our size our contribution is disproportionate and I trust that the RNMS rugby sevens team will not let us down in Dubai later this year

All of this would count for nothing if we did not deliver where it matters operational capability Our people both regulars and I must emphasise the reserves continue to give exemplary performance on operations both big operations like Telic and the continuing routine operational tasks that are part and parcel of the navy s daily business A key and often forgotten part of that operational delivery is the Institute of Naval Medicine which ensures the operational capability of significant parts of the navy and indeed is recognised in the new MOD Main Building with its own banner in one atrium

However as we are all to well aware we live in changing times As Churchill remarked it is best to grasp change by the head or it will grasp you by the throat What changes face the branch and why? The branch is unbalanced For example I am only supposed to have 3 MS Commanders which would be a dreadful waste of talent demonstrated by there actually being 7 MS Commanders three Captains and a Commodore It is the availability of tri-service jobs that has allowed this talent to bloom but we must recognise that our structures are outdated and not only in the MS area I am very glad the tables have been cleared and that there are no coveanent missiles we are still far too doctor centric we must open up the structure far more posts should be medical navy

We have not been so fortunate on the nursing side the number of posts for nurses and the higher opportunities on the tri service basis have reduced and higher posts are loaded towards educators rather than clinical deliverers While we have managed to increase the number of Lieutenant Commander lines we still continue to lose many of the brightest and the best nurses by PVR because they see little prospect of advancement All is not doom and gloom we are taking forward nurse practitioners afloat following a successful trial Indeed the CO of the ship that conducted the trial last week asked for a permanent nurse practitioner on board, more telling than even the trial report The trial showed that we are not delivering areas of care that we should thus a nurse practitioner is in some respects an enhancement not an alternative to an MO Fleet are now looking to have nurse practitioners in all capital ships I must emphasise they do not replace MAs MAs are unique and irreplaceable nurse practitioners fit into the spectrum of medical care between MOs and MAs but rubbing at the bottom of the MOs if you see what I mean

Turning to the MA as we do when there is a problem that needs sorting out they always have been and remain and will be into the foreseeable future the absolute bedrock on which the RNMS rests However they have to move forward and we have to get them a registrable qualification probably as assistant practitioners

Those of you who know me will know I spent the first six years of my naval career in the RNR In fact the last NAVSEC on seeing my NMIS printout which doesn t record RNR service asked how I could have earned a bridge watch keeping ticket before I joined the RN I watch the RNR with keen interest and am very glad that we have at last been able to define their operational role integrating them into the operational ORBAT following the deployable medical capability study

The way ahead for our dental colleagues is uncertain However I know that whatever structure comes out of current studies we can look forward to not only continuing to receive high levels of operational support from the dental branch and the personal dental care we are used to

Probably the major change that is under way is the aggregation of primary healthcare as shown under MDG(N) In many respects this is the healthiest sector of the RNMS we have outstanding trainees and our healthcare delivery is according to inspection reports excellent Both NELSON and DRAKE should soon become training practises However there are clouds on the horizon we are under resourced we only just meet NHS standards for numbers of practitioners and at least one of the sickbays note I said the sickbays not our people can be be described as a professional shirt Historically administrative control of primary care has rested with command For many reasons that is unworkable command does not have the necessary competences to oversee healthcare

ivery particularly as now it includes not only
neral practice and occupational health but
w community mental health and
abilitation Clinical governance the need to
ienate output costings and in work effectively
h DMSD all make aggregation inevitable I
it think I need to spell out the advantages of
controlling our own destiny we have
overed the hard way what happens when you
it after DCS15

believe that the Medical branch is in many
as in much better shape than it has been for
ny years and I think we all of us in the RNMS
a debt to my predecessors who fought
ough the dark days post DCS15 battled with
unloved DSCA and its machinations but
ve all to our people who have kept on
vering I must also thank the wider service
its support while we get teased and worse
Navy as a whole has always been extremely
portive if at time somewhat ignorant of what
do and how we do it In particular we always
support from those who have seen the
phant Those of you who know me will be no
prised that I am making a historical allusion
ing the elephant dates back to the early days
he American civil war when a Union General
d up in full view of the enemy to inspire his
ops saying they couldn t hit an elephant at this
ge and promptly was shot by a Confederate
rpshooter Thereafter those who had seen the
phant on either side were those who had seen
nbat One principal guest this evening has
n the elephant and has always been a strong
porter of the medical branch I am delighted
welcome as our principal guest our boss the
t Sea Lord and Chief of the Naval Staff
mral Sir Alan West and am delighted that he
ccompanied by Lady West tonight In asking
members of the Royal Naval Medical Club to
and drink to the health of our guests I also
on Admiral West to propose the health of the

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Service News

Civilian Consultant Advisers to MDG(N)

Mr J D BEARD M.Ed ChM FRCS
Vascular Surgery

Dr M S NIELSEN
Intensive Care Medicine

Defence Consultant Adviser in ORL to SG
Surg Cdr C R PEARSON

ROYAL NAVAL MEDICAL AND DENTAL OFFICERS

Academic Achievements brought to the editor's attention

Surgeon Commander S J TANSER
Doctor of Medicine

Surgeon Commander P A HUGHES
FRCGP

Surgeon Lieutenant Commander E M KNIGHT
MRCGP with merit

Surgeon Lieutenant Commander J CARTY
MRCGP with merit

Surgeon Lieutenant Commander A C PALMER
MRCGP

Surgeon Lieutenant Commander K R E J
PRIOR Primary FRCA

Surgeon Lieutenant S N J LAMONT
MRCP

PROMOTIONS

to A/Surgeon Lieutenant
L S MARTIN S J DROOG L J HERBERT D M MINSHALL S MILES R J BARKER E J HARDING J L DURKIN K L DAVEY H J EVANS T G ROBINSON C J GIBBENS A C HALPIN O H RAINEY

to Surgeon Lieutenant
A L COCKRAM S G GOKHALE D L LONGMORE K S ROUE D ROSCOE D L POTTER E B G BARNARD C M HILLMAN M K O SHEA

to Surgeon Lieutenant Commander
S J BARTON T J BRODRIBB P J B COATES A D FRANKLYN MILLER C L GRAINGE J M E KEOGH N MARTIN V L PRICE J A J M READ T E SCOTT N P MARTIN

NEW ENTRIES
Cadetships

Surg SLt M J L J LEONG
Surg SLt C L HUGHES
Surg SLt E M M EDGAR
Surg SLt D J C ANGUS
Surg SLt W J DENBY
Surg SLt R L FRY
Surg SLt A H HENDERSON
Surg SLt J J REELLY
Surg SLt P G KEMP
Surg SLt M W ROBINSON
Surg SLt R K LEE
Surg SLt S D P TOWNER
Surg SLt A F H SHAW

DIRECT ENTRIES

Surgeon Lieutenant
A J MORRIS

Surgeon Lieutenant
M C PHILPOTT

Surgeon Lieutenant Commander
P J FOWLER

Surgeon Lieutenant Commander
M J TURNER

Surgeon Lieutenant Commander
E CROWSON

Placed On Retired Or Emergency Lists.

Surg Cdr S J PARKER
Surg Cdr M A GLOVER
Surg Lt Cdr J CARTY
Surg Lt Cdr E M KNIGHT

APPOINTMENTS

Associate Director of Postgraduate General Practice Education Royal Navy
Surg Cdr P A HUGHES MBBS MRCGP
DRCOG DFFP

Prize Winner Oliver Sword
Surg Lt E H YATES (Lizzie)

MEDICAL SERVICES OFFICERS PROMOTIONS

to Lieutenant Commander
BLOCKE Andrew D
FOLLINGTON Daniel C
MANWARING Roy G
MCGUNIGALL Roy J
SMITH Mark P

to Lieutenant
J E FOWLER
V L ROBSON HEATLIE

Placed on Retired List
Sqn Ldr Cdr(D) F J HOLMES

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

PROMOTIONS

to Lieutenant Commander
BAGNALL Sally A E
BEARE Amanda L
CHILVERS Leah D
ENGLAND Lorraine
HOFMAN Alison J
MUNDEN C S

Placed on Retired List
Lt Cdr N J BROOM MBE
Lt C HASLAM
Lt K J MILLAR

ROYAL NAVAL RESERVE & QARNNS(R)

PROMOTIONS
To Surgeon Commander
ASHPOLE Richard D
CORSON Robert J
GARDINER George D

QARNNS(R)
Lt D DICKINSON
Lt K MCCULLOGH

Retirements & Resignations
RNR
A/Surg Lt Cdr A D NEWLAND
Surg Cdr R WHEELER
Proby Surg Lt H JONES

MDG(N) Presents the Bar to the Long Service and Good Conduct Medal to WOMA D Currie

At the recent Medical Branch Senior Rates Study Day held at Fort Blockhouse the Medical Director General (Navy) Surgeon Rear Admiral M Farquharson Roberts presented Warrant Officer 1st Class (Medical Assistant) D Currie with the bar to the Long Service and Good Conduct medal. The citation for this award read

Warrant Officer Donovan CURRIE joined the Royal Navy in January 1972 as a Junior Medical Assistant. Following his initial training he saw service with Her Majesty's Ships HERMES and HAMPSHIRE and also with 45 Cdo RM.

In 1976 he was advanced to the Leading Rate and was one of the first MAs to qualify as a State Enrolled Nurse. This was of such benefit to the Navy that he was then immediately drafted to the Submarine Service. Training alongside a group drawn exclusively from the engineering branch he had the distinction of beating all but one of them for the award of overall top SM student for that term. Unfortunately due to medical reasons he was withdrawn from further SM training but is proud to state that he qualified for one days submarine pay.

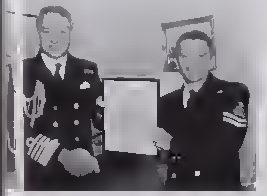
Shortly after his return to General Service he was advanced to Petty Officer and after a period at RNH Haslar was drafted to HQ AFSOUTH in Naples. He so impressed his PMO who was later to become Surgeon Rear Admiral Alexander Craig that he was awarded the coveted Sick berth Petty Officer Efficiency Medal for 1983.

The following year he was promoted to Chief Petty Officer and embarked on a variety of challenging posts including running the Medical Centre at HMS St VINCENT in London. Operationally he served on the staff of Commodore Mine Warfare and CINCFLEET with his final 3 years at sea spent onboard HMS Ark Royal as Sick Bay Chief.

Promoted to Warrant Officer in 1998 Mr Currie served 3 years in one last surviving RNH at Gibraltar where he was awarded the Meritorious Service Medal he joined the Training Division at INM in 2003.

Overall Mr Currie serves as an excellent example to us all in a Branch noted for the high calibre of its people. His service may be summarised by a line in his Staff File which states WO Currie is an excellent man whose integrity loyalty and commitment to the Royal Navy are without question.

POMA FREDEN



Commander [illegible] Jonathon Band [illegible]

The RNMBR & SBA award a prize to the best Leading Medical Assistant each year
This year's prize will be awarded by MDG (N) to **LMA John Roberts**

The VAD also award a prize each year to the best Medical Assistant.
This year's prize will be awarded by MDG (N) to **MNE Kevin Wheeler**

Royal Naval Medical Branch Ratings and Sick Berth Staff Association
The RNMBR & SBS Association has existed in one form or another since the end of the First World War when an association was formed with branches in the 3 port divisions which served the needs of both serving personnel and retired members. As a result of the popularity of these associations a separate one for retired members was formed in 1938. They had varied fortunes over the years but flourished in the immediate WWII post war period until the numerical strength of the Navy began to decline and port divisions became less distinct in the 1970's. A similar fate awaited the retired members and by 1981 all had ceased to exist. However in 1984 there was a resurgence of interest and the new RN Medical Branch Ratings & Sick Berth Association was formed with the new title reflecting the changes that had taken place in the Naval Medical Services structure over the years.

VAD
In 1909 the VAD came into being to provide additional nurses in the event of war. It was originally formed by the British Red Cross. At the outbreak of war in 1914 approximately 14,000 women were serving. Amongst their duties were the escort of the seriously injured, manning dressing stations and assisting doctors to man the 1,400 emergency hospitals. After the war the women reorganized to supplement the medical services in HM hospitals.

In the Second World War 15,000 members enlisted in the Royal Navy, Royal Air Force and the Army. The Army VADs were absorbed into the ATS/QAs. Some transferred to the Royal Navy who continued to have VADs serving with them until 1960 when they were absorbed by the QARNNS. The VADs serving with the Royal Air Force were disbanded at the end of the war. The VAD continued to have ups and downs and numbers and interest steadily grew. Today the VAD has in excess of 500 members.

MDG(N) [illegible] LMA of the [illegible] prize winners [illegible] LMA Mac[illegible] Roberts and VAD [illegible]

CITATION FOR LEADING MEDICAL ASSISTANT OF THE YEAR AWARD LEADING MEDICAL ASSISTANT JOHN ROBERTS D247151A

Leading Medical Assistant John ROBERTS joined the Royal Navy in November 1999 and completed his Common Core training in December 2000. During training he proved to be a bright intelligent rating who worked hard both at his academic examinations and his clinical training. On completion of initial training he successfully undertook his Part IV at the Royal Naval Hospital Gibraltar until April 2001.

His first draft as a qualified MA was for 6 months at **RNAS CULDROSE** where he quickly established himself within the busy environment of a large sickbay. Following this he commenced specialist MASM training at the Institute of Naval Medicine in Alverstoke, which he successfully completed in the December 2001. On completion of this he was drafted to Faslane for submarine qualifying course, completing his wet training in HMS VIGILANT. He has since been working on board HMS VENGEANCE for 2 years. During this period he has taken part in 3 operational patrols, the most recent of which saw him assisting with the training of 6 MASM in the wet element of the submarine qualifying course.

ROBERTS attended his Leading Medical Assistant Professional Qualifying Course in February this year where he again demonstrated exceptionally high academic standards in

demanding course attended by 14 very competitive colleagues The course as a whole produced some outstanding examination results with many achieving marks of over 90% ROBERTS fought off the fierce competition valiantly with an average pass mark of 95% and 100% in his medical administration examination

Throughout the course ROBERTS demonstrated a considerable capacity for hard work and proved himself a very reliable rating with excellent potential for an outstanding career within the Defence Medical Services He is due to complete his Leading Rates Command Course in October this year

Following his exceptional performance so far it gives me great pleasure to award the Leading Medical Assistant of the year award to LMA ROBERTS

M A Farquharson Roberts CBE QHS MA(Lond) FRCS
Surgeon Rear Admiral
Medical Director General (Naval)
30 September 2004

CITATION MEDICAL ASSISTANT OF THE YEAR
MARINE KEVIN WHEELER - P057950H

Marine Kevin Wheeler started training in November 2002 having served with the Royal Marines in a general duties role since joining 4 years previously From the very start of his course WHEELER demonstrated maturity and A KEEN determination to succeed He excelled academically throughout training achieving an average mark of 92% with 95% in 4 out of 6 of its Common Core exams He also found the time to assist fellow course members who were struggling both academically and physically giving freely and used his own personal time to ensure they had support if needed

He continued to demonstrate these high standards during the Clinical Placement phase of his training resulting in outstanding reports from his mentors He displayed a professional and tentive manner and was at all times respectful patients and staff alike During this phase of [illegible] his [illegible]

WHEELER's ex[illegible] continued throughout basic training at DMSTC where he achieved yet again excellent individual results With excellent military bearing and an extremely conscientious and professional approach to his duties he can be relied upon to execute any task instructors efficiently and effectively

WHEELER fully deserved the Herbert Lott award for top student in his entry and has demonstrated himself to have all the attributes required to merit selection as Medical Assistant of the Year

M A Farquharson-Roberts CBE QHS MA(Lond) FRCS
Surgeon Rear Admiral
Medical Director General (Naval)
30 September 2004

The Opening Ceremony of the One Stop HOOD Building HMS COLLINGWOOD The Service was conducted by the HOOD Association Padre the Reverend Ron Paterson MBE who served aboard the HOOD as a Junior Seaman in 1932 and the plaque was unveiled by Lieutenant Ted Briggs MBE RN Rtd the last remaining of the three survivors from the sinking of HMS HOOD in 1941

MDG(N) Planes a tree in the courtyard of the newly opened Hood Building HMS COLLINGWOOD

[Alternative caption suggestions will be welcomed Ed]

DOUBLE FIRSTS FOR NAVY GRADUATE RADIOGRAPHERS

[illegible] here being congratulated by Surgeon [illegible]mmander Peter Buxton Defence Consultant [illegible]visor in Radiology are CPOMT(R) Shaun [illegible]lor and LMT(R)Catherine Bowie Both [illegible]ently graduated with first class honours [illegible]rees in Diagnostic Radiography from [illegible]nfield University The pair were the only two [illegible]nary students in their year group and amongst [illegible]y five to gain first class degrees from a class [illegible]35 In addition LMA Bowie received the [illegible]ley Prize awarded to the student who [illegible]eves the best result in Part III examinations and the Philippa Mathews Systems Prize awarded to the student who achieves the best distinction CPO Taylor received the Cranfield college prize awarded to students who do particularly well in Part III examinations

Both graduands were Branch Transfers CPO Taylor previously served for 11 years with the Air Engineering Branch LMA Bowie transferred from the Education Branch CPO Taylor and LMA Bowie have been drafted to Royal Hospital Haslar to begin their careers as qualified radiographers having had the best of starts

Royal Navy Medical Club

The following information about the Royal Navy Medical Club may be of interest and perhaps prompt some readers to join

The formation of the Royal Navy Medical Club was suggested at a dinner for Royal Navy Medical Officers held at the Criterion on 19 December 1911 In March the following year the proposal was circulated and accepted that the Royal Navy Medical Club would be formed to promote by means of an Annual Dinner the social intercourse of Medical Officers both active and retired of the Royal Navy The subscription was to be 5/- annually and the total cost to each member for the dinner was not to exceed £1/10/0d inclusive of the subscription

In addition to the Annual Dinner the club traditionally held a reception in London in May timed to coincide with the Chelsea Flower Show This event became increasingly difficult to sustain and in 1993 a joint cocktail party with the Medical Mess at RNH Haslar was held In 1996 the Medical Services and RNMC Cocktail parties were combined and this remains the current successful format the venue for the past 3-4 years has been MDG(N)s official residence at RH Haslar and with his permission will continue so for as long as possible

The Annual Dinner is called the BLOOD RED DINNER usually held in September and in even years has traditionally been held at the Royal Naval College Greenwich in the Painted Hall In odd years there is a "Provincial" Dinner held in a Naval Port Area This year the dinner was held at Greenwich and copies of the speeches are included in the Journal

Membership is now open to every present or past Medical Dental and Medical Services Officer of the Royal Navy Royal Naval Reserve or Royal Naval Volunteer Reserve plus QARNNS and QARNNS(R) Officers and Civilian Consultants to the Royal Navy Exceptionally the Committee may elect other persons who have made a significant contribution to the RN Medical Service to become Honorary Members Membership is for life and retirement change of status etc have no effect

LIFE MEMBERSHIP FEES SINCE 1995

SERVING PERSONNEL

Surgeon Sub Lieutenant	£3.00
Acting Surgeon Lieutenant Sub Lieutenant MS Sub Lieutenant QARNNS	£6.00
Surgeon Lieutenant Lieutenant MS Lieutenant QARNNS	£10.00
Lieutenant Commander MS Lieutenant Commander QARNNS	£15.00
Surgeon Lieutenant Commander	£20.00
Surgeon Commander Commander MS Commander QARNNS	£25.00
Surgeon Captain Captain MS Captain QARNNS	£30.00
Officers of One Star and above	£50.00

CIVILIAN PERSONNEL

Civilian Consultants to Royal Navy	£25.00
Retired from RN but still in work	£25.00
Consultants Emeritus to Royal Navy	£5.00
Fully retired from work	£15.00

Notes

1 Membership fees cover the costs of disseminating information to life members (1 life) about Club functions

2 Serving personnel include RN RNR QARNNS & QARNNS(R)

3 Each Club function is budgeted for as being self financing Club reserve funds are limited and will not normally be used to subsidise functions

ROYAL NAVY MEDICAL CLUB
MEMBERSHIP APPLICATION FORM

Service
RN/RNR/RNVR/QARNNS/QARNNS(R)/
Civil Consultant (Circle)

Rank/status/decorations

Date joined

Name and Post Nominals

Date retired (if appropriate)

Address

I undertake to inform you of any change in address or personal details in order that the club records may be accurately maintained

Postcode

Telephone No

Please send me the following:

CLUB TIE / LADIES' SCARF

Total

White on Navy Blue (Silk) Tie at £18.00 each

White on Navy Blue (Silk) Scarf at £18.00 each

I enclose a cheque for to cover the cost of subscription fees and ties / scarves (if applicable)

Note Cost of Life Membership is variable

Signed Date

Club use

Acknowledgement sent ☐
Address noted ☐
Tie / scarf dispatched ☐
Cheque dispatched to Hon Treasurer ☐

Completed forms should be sent to **Hon Sec RNMC, C/O MDG(N) Med Coord, Rm 127 Victory Building, HM Naval Base, PORTSMOUTH, Hants PO1 3LS**

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Obituaries

Surgeon Captain Robert Currie Telfer FRCS Royal Navy
1933 to 2004

Bob Telfer who died in September 2004 was for many years one of the main stays of Naval Orthopaedics as an operating Surgeon at the Royal Naval Hospital Haslar and after being invalided as the Consultant in charge of the Scottish Orthopaedics clinics.

He trained in Edinburgh and was Professor Sir Stanley Davidson's House Physician before entering the Royal Navy in 1958. After his initial courses he served in Destroyers and early on showed the liking for and understanding of sailors that was to the hallmark his whole Naval Service. He went on to train as a Surgeon and became a Consultant Orthopaedic Surgeon in 1972. Always a practical Orthopaedic Surgeon never an academic his practice was characterised by genuine regard for his patients meticulous attention to detail and above all the recognition that there was not an operation for every condition.

He was hard working of the highest personal standards and totally dedicated to the Royal Navy. He was never one to blow his own trumpet when serving in Malta he rescued a young girl from drowning and refused to allow his name to be put forward for a Humane Society award. He did however receive thanks of the Prime Minister.

He was a keen sportsman in his younger days playing rugby to a high level a cartoon from his days in HMS ALBION portraying him as the shape of a rugby ball features on his office wall and reflected his later increase in girth.

He retired to his native Scotland having worked a full day in the vineyard without complaint.

He is sorely missed by Elizabeth and his two children (one an RNR Medical Officer) and by his many patients and trainees.

Surgeon Rear Admiral M A Farquharson Roberts

Edward DeForest Thalmann
1945–2004

Durham North Carolina. Edward DeForest Thalmann MD 59 died unexpectedly at his home on Saturday July 24 2004. Captain Thalmann US Navy (Ret) an internationally recognized physician scientist and applied mathematician was a leader in the application of modern mathematical techniques to the prevention of decompression sickness (the "bends") in underwater divers. He was a major architect of the thinking and research that form the underpinnings of the current theory of decompression sickness of the diving procedures now used to prevent it.

His work began at the US Navy Experimental Diving Unit in Washington DC where he eventually became Senior Medical Officer and continued at the Naval Medical Research Institute in Bethesda Maryland. His initial studies were aimed at developing a mathematical formula (the Thalmann Algorithm) that reflected as closely as possible the known science of gas exchange in human tissues and which could replace older procedures that had been developed in the mid twentieth century based largely on diving experience. Using this new theoretical foundation Dr Thalmann supervised hundreds of experimental dives to develop and verify a new set of time and depth limits (decompression tables) to protect divers. These tables were approved for use by the Navy and provide for much greater flexibility in depth and duration for safe diving and allow for the use of breathing gases other than air. This increased the operational capabilities of military divers such as the US Navy SEAL teams and rescue and salvage divers. The Thalmann Algorithm is currently being used by the Navy to develop diver carried computers to calculate safe individual time limits for complex dives of varying depth. In addition Dr Thalmann's theoretical work is being used to revise the standard US Navy Decompression Tables employed for less complex dives using compressed air and this will eventually benefit future military divers as well as the thousands of civilian recreational divers worldwide. Dr Thalmann was also part of the team that developed the protocols used to protect US

tronauts when they leave the protective environment of the International Space Station the lower atmospheric pressure in their space suits

Dr Thalmann was born in Jersey City New Jersey April 3rd 1945 and attended Rensselaer Polytechnic Institute in Troy NY where he received a Bachelor of Science degree in 1966 He received an MD from Georgetown Medical School Washington DC in 1970 From 1970 to 1971 he was a Surgical Intern at the Royal Victoria Hospital in Montreal Quebec Canada In the Navy he was a graduate of the Undersea Medical Officer and the Diving Medical Officer courses In 1971 to 1972 he headed the Medical Department on the Polaris Submarine SSBN Thomas Jefferson From 1972 to 1975 he was Church Diving Medical Officer at the Navy Experimental Diving Unit Washington DC In 1975 while on active duty he was a postdoctoral fellow in physiology with renowned respiratory physiologists Herman Rahn and Hans Lundgren at the State University of New York at Buffalo From 1977 to 1985 he returned to the Navy Experimental Diving Unit now in Panama City Florida first as Assistant Senior Medical Officer and then as Senior Medical Officer From 1985 to 1987 he served as Exchange Officer with the Royal Navy Institute of Naval Medicine in England From 1987 to 1993 he was at the Naval Medical Research Institute in Bethesda Maryland first as Head of the Physiology Department and then as Head of the Medicine Department in addition to his duties as head of the Department Concurrently he was Director of Decompression Research Programs at the Institute In December 1995 Dr Thalmann retired from Active Duty as Captain in the Medical Corps U S Navy but continued at the Naval Medical Research Institute as Senior Scientist in Decompression Research For his work Dr Thalmann was honored by the Navy with the Legion of Merit for "exceptionally meritorious conduct in the performance of outstanding service to the United States

From July of 1994 to the present Dr Thalmann has been at Duke University at the Center for Hyperbaric Medicine and Environmental Physiology where he was Assistant Clinical Professor in Anesthesiology He was also Assistant Clinical Professor of Family and Community Medicine at Duke In addition he was Assistant Medical Director for the Divers Alert Network At Duke Dr Thalmann continued his important theoretical studies on gas exchange and was working up to the time of his death on a project to predict the safe limits for breathing oxygen at increased atmospheric pressures to benefit military divers as well as patients in clinical medicine who are receiving hyperbaric oxygen therapy

He is survived by his former wife Brenda and by his daughters Katherine and Amanda of Chapel Hill North Carolina as well as by his father Edward J Thalmann of Whiting New Jersey his sister Stacey Thalmann and her son Alex of Washington Park North Carolina

All his friends and colleagues both in the United States and abroad knew Dr Thalmann as a great bear of a man whose booming voice and sometimes gruff manner could not conceal his generous heart and consummate intelligence His dedication and leadership in a field that faced seemingly insurmountable challenges inspired all who knew him

Claude A Piantadosi MD

It is with deep sadness that we report the tragic death in a road traffic accident of Surgeon Commodore G W Myers OBE RN Director of Naval Dental Services Heart felt condolences go to his family and friends A full obituary will be published in the next edition

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Administration Notices

Management Committee

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All manuscripts should be submitted to the Editor JRNMS Monckton House Institute of Naval Medicine Alverstoke Hants PO12 2DL Each author must sign the covering letter as evidence of consent to publish One author must be identified and authorised to receive editorial comment and approve proofs

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Manuscripts for consideration may be submitted to the refereeing process The Editor retains the customary right to style and if necessary to shorten material accepted for publication to alter paper to achieve consistency in terminology and to suggest other revisions

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Preparation of manuscripts

Manuscripts must be in English in a form suitable for publication as against oral presentation. **Uniform Requirements For Manuscript Submitted to Biomedical Journals** (N Engl J Med 1997 **336(4)**: 309-15) gives guidance. Scientific papers should be prefaced with an abstract of the hypothesis, argument and findings. This should not exceed 150 words. Headings within the text should be used to highlight the content of different sections. Where possible manuscripts should be prepared in Microsoft Word on CD or floppy disc. Otherwise they should be typewritten in double spacing on one side of A4 paper. The author should retain a copy of the disc/manuscript.

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The title page should contain a concise informative title, up to five key words, the names and initials of all authors and their appointments, and the department(s)/institution(s)/ship(s)/establishment(s) where the work was carried out.

Tables and illustrations

Tables and illustrations (figures) should add to the paper rather than only repeating information presented in the text. Each table and illustration should be on an individual page separate from the text, be numbered in two distinct sequences in the order in which they are mentioned in the text, and have an explanatory caption typed on a separate sheet for illustrations.

News photographs of academic, social, sport or other occasions involving members of the Royal Naval Medical Service are welcomed.

Normally printed illustrations will be monochrome. The views of the Editor should be sought where colour illustration is thought to be essential or highly desirable. Photographs must be of good quality, glossy, mounted and be provided in camera ready form, with redundant areas trimmed off. The figure number, author's name and top/bottom should be marked on the back. Line drawings should be professionally drawn and labelled, or of equivalent standard and submitted as photographic prints or high quality photocopies. Lettering and numbering should be sufficiently large to ensure legibility after reduction for publication; freehand lettering is not acceptable.

Measurements and abbreviations

Measurements should be given in the units in which they were made but, with the exception of blood pressure in mmHg and haemoglobin concentration in g/dl, non metric units must be accompanied by metric (SI) equivalents. The approved name of drugs should be used (proprietary names may follow in parentheses). If an abbreviation is used, the term for which it stands should be given in full at its first mention in the text, e.g. Institute of Naval Medicine (INM).

References

Responsibility for the accuracy and completeness of references lies with the author(s) and these will not be checked by editorial staff. Only essential references should be included, and authors should verify them against the original documents. References are identified in the text by superscript Arabic numerals and are numbered and listed consecutively at the end of the manuscript in the order in which they are first cited in the text. A full list of references should be given at the end of the paper using the form of reference adopted by *Index Medicus*. Papers accepted but not yet published should be included in the references followed by (in press). Those in preparation (including any submitted for publication), personal communications and unpublished observations should be referred to as such in the text only.

Acknowledgements

The assistance of those who are not authors but made substantial contributions to the study and/or preparation of the paper should be acknowledged as should the source(s) of grant support, equipment, drugs, facilities etc.

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JOURNAL
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Contents

Editorial

is hard to believe that we are in yet another year and that Christmas is over again I wish you all very happy healthy and prosperous New Year The catastrophic events in Asia has started the new ear off with the stark realisation that no-one knows what is around the corner and how fragile life nd all the trappings of it can be I am sure most of us will know someone who was there or involved hope and pray that no subscriber has suffered personal loss The disaster relief effort and rebuilding ogramme is of such a scale to be almost incomprehensible and the continuing reports of family agedy and heartache puts into stark relativity the issues we see as problems or challenges In ontrast to the sad stories there are those of extreme bravery and luck at escape one cannot help bnt ismire and wonder at the resilience of the human being

This third edition for 2004 brings us back into synch regarding timeliness of issue release and I am ry pleased to report an upturn in articles being submitted for publication The next edition will be n a mental health theme and Surgeon Commander John Sharpley the Consultant Adviser in sychiatry is leading on articles for it The Management Committee continue onl efforts to enhance e sustainability of the Journal and I would ask you to note that it has been decided to increase bscriptions for new joiners from £12 to £15 This will not affect current subscribers bnt will we ope, help to ensure the financial viribility of tbe Jonrnal for the fitnre

The last quarter of 2004 was tinged with deep sadness with the sudden and tragic death of Surgeon ommodore Geoff Myers OBE the Director of the Naval Dental Service Geoff was an enthusiastic d hard working member of the Journal Management Committee he put himself out to attend every eeting and was always there with practical and intellectual contributions He was a strong cheerful d optimistic supporter of all we did also he was a close personal friend of many of us and our oughts and prayers continue to be with Denise William Simon and Sam who must feel his loss so eply

Finally my plea for help is repeated Thank you to the two serving members who have offered help we will indeed use it There is a slightly different slant to my plea on this occasion and that is if yone would be prepared to review articles or books I would be very grateful if yon would let me now together with the area of expertise you would wish to cover Enough of the pleas- with your ntinued help and support we are turning the corner we will keep it up I hope you find this edition formative and enjoyable to read and I would draw your attention to the most interesting letter from ts Mackenzie in the letters section If anyone has similar personal anecdotes or experiences I ould welcome them to share with all

Frank Reed

B A dedicated E-mail address for the journal has been created. it is jrnms@mm mod uk

Sports Medicine

Boxing is a Dangerous and Brutal Sport

Dr A Wilcockson
CMP HMS Excellent

Boxing has always had bad press especially when the fight produces copious amounts of blood and the very rare occurrence of a stroke such as Mr Watson Boxing as far as the populace thinks is about one person trying his best to batter his opponent to the ground and hitting him plenty of times to the head This of course was the old behind the car park scenes where there were no rules other than kill your opponent. This fact was made worse with the various Rocky films All has changed with the formation of The Amateur Boxing Association which has brought in rules and regulations regarding boxers and officials

Since I have been involved in boxing for over 10 years and several hundred bouts I have sent one person to Hospital who promptly discharged him with a head injury card There have been a few facial cuts 2 dislocated shoulders plenty of immediate dazed what happened cases and wounded pride There is some blood, but not much as boxers are stopped by the officials and cleaned up If the bout is one sided the bout is stopped There have been many happy faces and personal pride in being able to get into the ring and fight Most have entered the ring and tried to out box and out wit their opponent People are protected when in the ring and it is a sport You know who your opponent is and you can see him.

So why is there such an outcry from people including the medical profession that boxing is a dangerous and cruel sport? It is difficult to understand since I see more injuries on a rugby or football pitch I am involved in several sports and rugby and football have me doing more medical work than boxing Players get hit from all round their eyes are gouged fisty fly and studs rake! At least the referee has the lines man to help these days Then there is football where even the England Captain admitted recently that he tried to injure an opponent Studs down back of legs into groins and elbows into face Stretchers appear frequently in both sports and players carried off Anterior cruciate ligament ruptures thus causing loss of earnings with huge input from medical field e g surgeons and physios Play is stopped whilst medics decide if a broken neck? Then a further delay whilst an ambulance is called Panic all round and the remaining players getting cold Injured player removed and play restarted with an injury soon to follow due to having got cold It is endless and the arguments of anti boxing don't tie in well! It is even more ludicrous that Uniformed doctors are against boxing Why? So we are happy to don uniform go to war and watch our colleagues fall down due to bullets or shrapnel We then patch them up Once patched up we can send them back into the firing line Most of the wounded will never see their opponent or who the blow came from

So is boxing really that dangerous and unsophisticated and thuggerish? Why not attend a boxing bout and see how well controlled it all is Then decide

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Sports Medicine

Regional Rehabilitation Unit (RRU) Portsmouth

Major K Fidall RAMC, Regional Rehabilitation Officer (RRO)

RU Portsmouth is one of 11 tri service RRUs the UK and one of two under the single rvice command of the RN It is situated thin HMS NELSON using the local RNSQ d Gym facilities plus the pool at HMS LMERAIRE The second RN RRU is at vmouth within HMS DRAKE

RRU Portsmouth opened its clinic doors at the ginning of December 2003 and the first patient s admitted for intensive rehabilitation in nuary 2004 At present we are functioning at % capacity due to staff shortfalls but funding s now been agreed to increase these staffing vels to the required strength by April 2006

The RRU concept was introduced as part of e Defence Medical Rehabilitation Plan due to large number of service personnel who are fit for operational purpose because of injury e aim is to return service personnel to erational levels of fitness as soon as possible

Fitter Quicker Principle

gional units have the ability to provide a co dinated delivery of care to reflect the needs of e local service population

The Region covered by RRU Portsmouth is e south coast from the Royal Marines at Poole the Royal Military Police Phase Two Training nit at Chichester

Patients referred are initially assessed at the nits disciplinary Injury Assessment Clinic IIAC) to decide the appropriate case anagement The MIAC members are

Sports Medicine qualified Doctor

Clinical Specialist Physiotherapist

Remedial Instructor

Through the MIAC there is rapid access to vestigations such as MRI Scan for those who ay require surgical intervention on the Fast ack initiative Each new assessment takes up 45 minutes which allows planning of the propriate case management For each dividual this will be determined by

- Clinical Need
- Operational Issues
- Individual Circumstances

The common outcomes of this initial assessment are

- Return to local rehabilitation facility with intervention or advice on treatment with organised review as required
- Admission for short period of intense rehabilitation generally of three weeks duration
- Referral to orthopaedics for opinion and surgical intervention including the planning of post op rehabilitation prior to surgery

The aim of all these outcomes is to optimise the patients recovery

A pilot study was carried out at RRU Edinburgh from April 03 to Sept 04 using the Fast Track scheme at MDHU Northallerton During this study patients were seen at the MIAC within 14 days investigations such as MRI Scans were completed within 14 days and surgical intervention if required was carried out within 30 working days

During the study 500 patients were assessed at the MIAC Sixty percent of those required rehabilitation only and were returned to fitness in an average of six months Forty percent required orthopaedic intervention plus rehabilitation and had an average return to fitness in 18 months This resulted in 165 000 working days gained per year by earlier return to full fitness after injury

A review of all the patients who had been referred to the RRU Portsmouth was undertaken on the 22 October 2004 to evaluate the RRU achievement so far At that point 195 patients had been referred to the RRU of which 95 had been discharged from rehabilitation

Figure 1 shows the breakdown of outcome of rehabilitation Seventy seven percent of patients had been discharged fully fit 2% had been referred to DMRC Headley Court for additional specialist input 5% were discharged time expired, 8% were discharged from the RRU with

a recommendation of discharge P8 were discharge to continue their service career with a recommended grading of P3P and 6% were discharged for administration reasons generally due to moving out of the region All of the patients who were discharged from the RRU not fully fit had improved in function and confidence in their ability to continue an active life

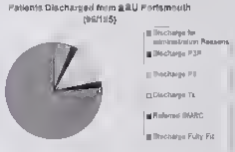

Figure 1

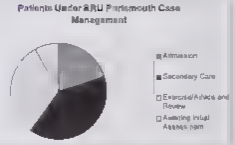

Figure 2

Figure 2 shows a breakdown of the 99 out of 195 patients who are still under RRU Portsmouth case management. Forty percent were awaiting Secondary Care intervention or opinion (inc Orthopaedics) or are in the rehabilitation phase after Secondary Care intervention 20% were either admitted at the time or due to be admitted within the next few weeks 32% had been given advice on rehabilitation locally received injection therapy or given exercises and were due to return for review and 8% were waiting for their initial assessment.

Figure 3 shows the distribution of all the patients by the part of the body that had been injured Forty nine percent of patients had knee injuries 10% ankle injuries 13% other lower limb injuries 17% spinal injuries 8% shoulder injuries and 3% other upper limb injuries

The three week intensive rehabilitation programme includes the following sessions

- Specific Exercise Classes (spine lower limb and upper limb)
- Group Therapy
- Recreational Therapy
- Hydrotherapy
- Individual Exercise Programmes
- Relaxation
- Physiotherapy
- Education

The patients carry out functional tests week to evaluate their progress and are reassessed the MIAC at the end of their admission to decide their future management On discharge they are given an individual exercise pack including the exercise programme they have been using during their admission advice on improving fitness further such as return to running and Cumbria Fitness Test progressions as appropriate

RRU Portsmouth is still developing both its size and the services it can offer We hope to start a back education programme early next year. Other services such as a Patellofemoral Pain Group will unfortunately need to wait until the unit reaches full establishment.

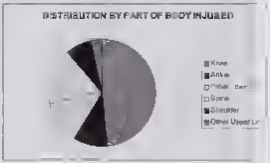

Figure 3

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Sports Medicine

Improving the Selection of Candidates for Royal Marine Recruit Training by the Use of a Combination of Performance Tests

Dr A J Allsopp, Head of the Environmental Medicine Unit, Mr A Shariff, formerly Higher Scientific Officer, Psychology Institute of Naval Medicine

KEY WORDS
Military training aerobic power recruit selection physical fitness psychometric assessment

ABSTRACT
Candidates who wish to undertake Royal Marine recruit training in physically strenuous course which now extends 32 weeks must first of all successfully complete a Personal Qualities Assessment (PQA) and four psychomotor tests (Naval Recruiting Tests or RTs) before attending a three day selection course at the Commando Training Centre Lympstone where their physical capabilities are tested to the hill. The effectiveness of theses procedures was untested until the Institute of Naval Medicine conducted a retrospective study during 1999 2000 from which the present study is taken

Data from 1232 recruits were examined to explore the relationship between the outcome of commando training (pass or fail) with these various selection measures Estimated aerobic power time to complete the assault course and age were associated with outcome as were PQA RTs 1 3- 4 and total RT score A regression equation comprising aerobic fitness assault course time RT4 and age gave the best overall prediction of outcome (64%) It is suggested that this mathematical approach provides a scientifically valid and objective assessment tool for future selection strategies

INTRODUCTION

The Royal Marines (RM) recruit training syllabus is recognised as one of the most arduous military training programmes in the world Unsurprisingly a large number of candidates either fail or opt-out of training however over recent years concerns have been expressed regarding the level of training attrition Despite substantial changes to the recruit physical training syllabus which have reduced injury-related discharge overall training attrition remains high at approximately 43% (Ross & Allsopp 2002)

The Recruit Selection Process

The RM recruit selection process is conducted in two stages the first is at the Armed Forces Career Office (AFCO) the second is the Potential Royal Marines Course (PRMC) conducting during a three day visit to the Commando Training Centre Royal Marines (CTCRM) Lympstone

At the AFCO potential RM recruits are first assessed by the Recruit Test (RT) The purpose of the RT is to evaluate a candidate's ability to cope with the mental demands of training The RT is a written multiple choice assessment divided into four sections reasoning literacy numeracy and mechanical comprehension The maximum score on each section is 30 At the time of the present study minimum standards were set for literacy (a score of 10) and numeracy (also 10) The minimum total RT score for entry to the RM was 52

If successful on the RT a potential recruit is interviewed by a Careers Adviser at the AFCO The purpose of the structured interview is to conduct a Personal Qualities Assessment (PQA) which examines 8 areas home background educational record interests group activities attitude to authority leadership and responsibility motivation and work record The

Careers Advisor makes a numerical assessment of the applicant on each of these factors and records a total PQA score for the individual (the maximum possible PQA score is 40). The RT and PQA assessments are the main elements of selection for a potential Marine recruit at the AFCO. Based on these scores (and information gained from references and medical and security clearance), the Careers Adviser then makes the decision whether to forward the candidate to the PRMC.

The PRMC's primary role is to assess the physical ability of a candidate. During the three days the candidates complete a Multistage fitness (Bleep) test (Ramsbottom, Brewer & Williams, 1988), an assault course assessment to be completed within 4 min 30 secs, a 3 mile (4.8 km) squad run (pass/fail), a test basic swimming test consisting of one length breaststroke, and various team and individual assessments in the gymnasium including pull ups, press ups and sit ups.

A selection decision is made whether an individual has passed or failed the PRMC based on his physical test performance and performance at the AFCO. Individuals who have performed well physically but are classed as a training risk (based on their AFCO performance) may be passed depending on their personal circumstances. Candidates passing the PRMC are forwarded to the 30 week recruit training programme.

This system of selection has developed over time without any audit systems to assess its efficacy. Furthermore, elements of the procedure, such as the team and individual assessments are subjective depending on the views of the assessors. Selection criteria need to be fair and objective and should measure an individual's present capability in the knowledge that this is the minimum physical standard for future training success. This present study was conducted (in 2000) to evaluate current recruit selection criteria by examining any relationships between the outcome of recruit training (pass / fail) and prior performance at the PRMC and AFCO.

METHODS

Subjects

Troops 751 to 774 (1232 recruits) were used as the sample for this study. These troops were selected as they were the first troops to start training on the revised common recruit syllabu entering CTCRM between September 1998 an October 1999 and had 24 months or more undertake or complete training.

Variables

Recruit Test scores (1 to 4 and total score) a PQA score were obtained from the Directorate Naval Recruiting. Bleep Test scores and assau course time were obtained from CTCRM an converted to a decimal scale. The Bleep Te Score was converted to an estimate of aerob power (VO2max) using the published line regression equation (Ramsbottom et al. 1988 for the purpose of assessing and comparing th aerobic fitness of the individuals in this study this derived measured was not used in th subsequent regression analysis. The above da were later collated with the training database t ascertain outcome of training (pass / fail) and th duration of time spent at CTCRM (weeks).

Statistical Analyses

Descriptive statistics and independent t-tes were conducted (SPSS version 11.0, SPSS UK to identify those selection variables which we related to pass rates. The data set was the randomly split into two sub samples: a tr sample (601 cases) and a reserve (631 cases Logistic regression analysis was performed o the test sample (n=601) using the backwar stepwise likelihood ratio method to determine function of selection scores that be distinguished between those who passed ra those who wasted from training. To validate th model the predicted outcomes for the reserv sample were compared to the actual outcome (f cross tabulation) and the accuracy of predicti compared to that of the test sample. Th percentage of passes within each quartile rang of the variables within the model were al examined and any trend across the quarti groups analysed by Pearson's Chi Square test.

RESULTS

Of the 1232 recruits in this study 564 passed o of training (46%). Their duration of stay CTCRM was a median time of 37 weeks (rang 32 to 110 weeks). In comparison those wh failed to complete remained at CTCRM f average of 12 weeks (range 0 to 125 weeks). O the 668 who did not pass out 306 (45% voluntarily withdrew from training, 98 (15% were medically discharged and 264 (40%) we discharged as they were deemed unsuitable.

Table 1 Descriptive statistics for the physiological variables

	n	*mean*	*standard deviation*	*minimum*	*maximum*
Age (years)	1232	19 1	2 8	16 0	32 0
Bleep Test score (decimal)	1232	11 88	0 93	8 82	13.54
Aerobic Power (mL kg^{-1} min^{-1})	1232	53 3	3 2	43 0	59 0
Assault Course time (min sec)	1232	3 43	0 29	2 24	8 07

Table 2 Descriptive statistics for the psychometric variables

	n	*mean*	*standard deviation*	*minimum*	*maximum*
RT1	1210	20 4	4 5	6 0	30 0
RT2	1210	19 0	5 3	8 0	30 0
RT3	1210	18 2	4 8	8 0	30 0
RT4	1210	19 2	4 2	9 0	30 0
RT total	1221	76 9	14 3	47 0	115 0
PQA score	1175	27 3	2 4	17 0	42 0

Table 3 Mean, 95% confidence limits and t values for Pass and Fail groups physiological variables

	Pass (n=564)			*Fail (n=668)*			
	mean	95% confidence interval		mean	95% confidence interval		t-value
Age (years)	19 4	19 2	19 6	18 9	18 6	19 1	3.45
Bleep Test score decimal)	12 09	12 02	12 17	11 7	11 63	11 77	7 51
Aerobic Power mL kg^{-1} min^{-1})	54 1	53 8	54 3	52 7	52.5	53	7 51
Assault Course time (min sec)	03 37	03 35	03 39	03 48	03 46	03 51	7 02

Because of missing data the sample size for the first part of the analyses ranged between 1175 and 1232 cases Of the 601 cases allocated to the test sample there were 27 missing cases yielding 574 cases in the regression analyses

Descriptive Statistics

Table 1 gives the age predicted aerobic power and assault course times of the recruits Table 2 details the individual and total RT scores

Individual Predictors of Training Success

Analyses of mean differences between groups revealed significant differences (P<0 01) between those recruits who passed and those who did not for Bleep Test score assault course time and age (Table 3) Similarly there were significant (P<0 01) differences for RT1 RT3 RT4 total RT score and PQA score – but not RT2 (Table 4) The size of the t values in Tables 3 and 4 give an indication of the degree of relatedness to the outcome measure (i e pass or fail)

Combined Predictors of Training Success

Use of the test sample to produce a prediction model.

Backward stepwise logistic regression resulted in a regression equation of four variables Bleep Test score (BLEEP) Assault Course time (ASSAULT) RT4 and age (AGE) as follows

0 377 BLEEP 0 807 ASSAULT + 0 047 RT4 0 061 AGE 3 801 = SCORE (Equation 1)

Where BLEEP and ASSAULT are decimal valu and a SCORE greater than 0 5 predicts a pass

The Nagelkerke R value for this model w 0 12 indicating that it accounted for 12% of t overall variance in outcome (i e pass or fai with a sensitivity of 0 51 (i e correct predicting 51% of passes) and a specificity 0 75 (i e correctly predicting 75% of fails) overall correct prediction of 64% of cases Wald statistic values (a measure of t significance of the regression coefficients of ea of the independent variables) were 12 9 12 4 9 and 3 6 for BLEEP ASSAULT RT4 a AGE respectively

Use of the reserved sample to test th accuracy of the prediction model

The above regression equation was applied the reserved sample of 631 cases, of which the were 15 missing cases (available cases 616 Cross tabulation of the predicted versus actu outcomes (pass or fail) indicated 145 of 2 passes (50%) being predicted correctly and 2 out of 325 fails (73%) an overall prediction ra of 62% These values were similar to those f the test sample

Table 4 Mean, 95% confidence limits and t-values for Pass and Fail groups psychometric variables

	*Pass (n=553)**			*Fail (n=657)***			
	mean	95% confidence interval		mean	95% confidence interval		t-value
RT1	20 9	20 5	21 3	20	19 7	20 4	3 50
RT2	19 2	18 7	19 6	18 8	18 4	19 2	1.23
RT3	18 6	18 2	19	17 8	17.5	18 2	2.58
RT4	19 7	19 4	20 1	18 8	18 5	19.2	3 71
RT total	78 4	77 3	79 6	75 6	74 5	76 7	3 51
PQA score	27 5	27 3	27 7	27 1	27	27 3	2 58

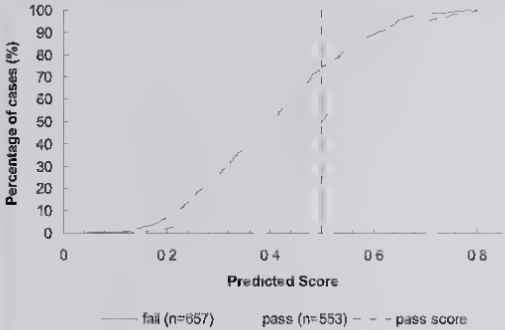
Footnotes

* n=558 cases for RT total and 534 cases for PQA

* * n=663 cases for RT total and 641 cases for PQA

igure 1

umulative number of passes and fails (percentage) against predicted score using the gistic regression model



able 5 Percentile values for those variables included in the logistic regression analysis nd aerobic power (determined from Bleep Test score)

		Percentiles		
	n	*25*	*50*	*75*
ge (years)	1232	17	18	20
Bleep Test score (decimal)	1232	11 17	11 92	12 83
Aerobic Power (mL kg^{-1} min^{-1})	1232	50 87	53 48	56 65
Assault Course time (min sec)	1232	3.23	3 40	3 58
CH4	1210	17	18	20

Figure 1 shows the cumulative pass and fail tes against predicted scores for the entire data 1 (test and reserve samples combined)

If a pass score of 0 50 (as indicated) were plied at the PRMC this would retain 50% of tential recruits likely to pass but reject 75% of ose likely to fail However if the pass score re reduced to 0 46 this would retain 60% of those who are likely to pass and reject 65% of those likely to fail

Quartile values for the variables within the model (and estimated aerobic power) are given in Table 5

Further examination of the variables within the regression analysis indicated a significant trend across the quartile range groups with respect to

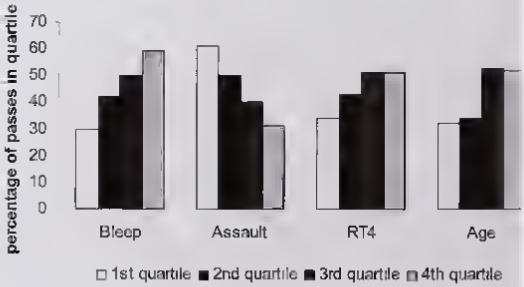
outcome (pass or fail) for example the percentage of passes in the lowest quartile of the Bleep Test (i e values below 11 17) was only 30% whereas for the highest quartile (values above 12 83) this was 59% These trends are shown in Figure 2 This Figure indicates that to have an overall 50% chance of success PRMC candidates should be aged 18 or over and attain a Bleep Test (decimal) score higher than 11 92 an Assault Course time faster than 3 min 40 sec and a RT4 score of 19 or above

DISCUSSION

This study provides empirical evidence to support the use of a combination of measures for the selection of RM recruits rather than any single measure Furthermore it demonstrates the relative weakness of qualitative scales such as the Personal Qualities Assessment or cognitive ability tests such as the Royal Naval Service recruit tests when compared with tests of physical fitness The results support the use of the PRMC as a selection tool to evaluate whether candidates have the necessary foundation of physical skills this is unsurprising given the physically arduous nature of the RM recruit training The present study also demonstrates that the selection process can be made more objective and reliable and th selection can be improved if physical ability or mental aptitude are combined within a predicti model Furthermore the relative sizes of bo the t and Wald statistics indicate that th physiological measures (Bleep score and assau course time) are more closely associated wi outcome and have a greater predictive value tha the psychometric assessments

The Royal Naval Service recruit tests we developed by Vernon and Parry (1949) t provide an objective measure of a recruit aptitude and supplement the impression forme at selection interview These psychometric tes were designed to be measures of general abili and to indicate specific strengths as a guide branch specialisation The RT4 is a mechanic comprehension test similar to the Benne Mechanical Comprehension test (Benne 1994) It tests spatial perceptual and proble solving skills within a 10-minute period usir elements such as gears and pulleys billiard bal and cars Whilst it has recently been criticised being out-dated and having a gender bias favour of male candidates (Kallmeier et 2000), this is of no concern when used to asse a single sex population such as RM recruit

Figure 2 The percentage of passes in each quartile group for each of the variables in the regression model



urthermore the present study indicates the alidity of three of the recruit tests to dis- ninate between pass and fail candidates and particular the utility of RT4 especially if used conjunction with other selection measures

Given the physically arduous nature of RM ining it is unsurprising that the Bleep Test was gnificantly related to passing the recruit ining course This is presumably a reflection the criterion pass out tests which are largely pendent on aerobic endurance (e g speed arches the 30 mile (48 km) route march and ngnent periods of load carriage) Consider for ample the metabolic oxygen demands of arching at 9 7 km h 1 (10 min mile pace) rrying 15 kg assessed in the laboratory to be 1 mL kg min (Bilzon et al 2001) If aintaining an intensity of 75% of VO2max er a 90 min period (the duration of the 9 mile ned march) they would need to possess a O2max of approximately 53 mL kg min to hieve this standard Given that basic military aining is reported to yield improvements of pproximately 7% to 10% (NATO Technical eport AC/243 1994) a high initial level of O max of approximately 50 mL kg min ould appear to be a pre requisite Note that the ean difference in VO2max for those who pass aining compared with those who failed was nall (1 4 mL kg' min) This is probably a flection of the manner in which the Bleep Test conducted the test often ceases at a prescribed int (usually Level 13 equivalent to a VO max 57 4 mL kg min) rather than ensuring each dividual achieves their maximum score The gnificance of the assault course variable in ese analyses probably reflects the anaerobic ndurance and strength requirements of recruit aining as well as an element of skill to perform e various elements of the course

There is also evidence that a higher VO2max t entry will reduce the likelihood of injury ring training Several studies indicate that or physical fitness (both cardiovascular and nsculoskeletal) and a low level of prior ysical activity lead to a greater risk of injury larwood 1999 Heir 1998 Gribben et al 95) and some of these injuries may be so rious as to result in medical discharge whilst ss serious injuries may result in recruits losing eir motivation to complete the course

It is possible that any loss of motivation due to injury or being back trooped also explains the apparent relationship between outcome of training and age which indicated 33% of those aged 18 years or below passing the course compared to 52% of those aged 19 years or older This assumes that younger candidates are less resilient and are less able to cope with the demands of the training or the training environment It may also be the case that these younger candidates have are physically immature musculoskeletal system to cope with the rigores of the training regime

The association between poor physical fitness and a greater risk of training injury in Royal Navy (RN) trainees (Allsopp et al 2003) has led to the introduction of a Pre Joining Fitness Test for RN and RM candidates This is a timed 2 4 km run performed on a treadmill to estimate aerobic power (using the Cooper regression equation Cooper 1968) with a pass standard for RM candidates of 10 min 30 s equivalent to 50 4 mL kg min Theoretically the PJFT could replace the Bleep Test, reducing the need for a costly three day PRMC assessment However this assumes that the two tests measure the same component of fitness it would introduce a systematic error from the conversion of the PJFT run time to a Bleep Test score and ignores the predictive component of the assault course time More importantly the present system of the three-day PRMC allows candidates to experience realistic taste of recruit training giving them an insight to their future instructors, training methods and the environment at CTCRM This preview is likely to reduce the likelihood of candidates opting out from training after successfully passing selection

The approach of using a combination of measures including physical fitness has a greater validity for military training which requires a high aerobic endurance and good upper body strength The regression model identified in this study has been reported to the RM executive (Pethybridge et al 2000) and a simple Microsoft Excel spreadsheet has been produced to compute individual candidates outcome score (from equation 1) These scores have been banded into six groups which equates to a training risk from low to high Further data collection is required to refine the model with respect to changes in weather conditions during the assessment and to identify the validity of other assessment measures

ACKNOWLEDGEMENTS
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Sports Medicine

Association Between Anatomical Features and Anterior Knee Pain in a "Fit" Service Population

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ABSTRACT

Anterior knee pain and overuse sports type injuries have been associated with anatomical factors. Specific diagnosis in knee pain is difficult: most service patients are grouped together as 'Patello Femoral Stress Syndrome'. Knee pain incidence within the service population is unknown, but thought to be greater than those presenting to General Practitioners. 193 active duty service men (100 Army and 193 Royal Navy) were interviewed and examined in relation to their knees. 138 measurements were made on each subject.

118 admitted to knee problems. Six had specific diagnoses ranging from patellar dislocations to ACL deficiency (with marked anterior instability). The remaining 112 individuals formed the study group and examination findings were compared with the 75 without Patello Femoral Stress Syndrome. The results have been analysed to determine normal ranges and predictors of knee pain.

Age, years in the military and results of patello femoral compression tests were consistently significantly different between the groups.

This survey provides useful information on normal values at examination. Q angle measurement was a poor predictor of knee pain. There was no clinically detectable anatomical variant that correlated with the Patello-Femoral Stress Syndrome. There was poor correlation between Tegner activity score and the perceived limitation on sport or work, as assessed on a visual analogue scale.

INTRODUCTION

Anterior knee pain and overuse sports type injuries are becoming increasingly common in modern day society. This is affecting both sporting and working practices. Development of these types of problem is associated not only with over exuberant indulgence in a physical activity, but is also known to be associated with anatomical variants of normal.[1-4] Insall[5] and Merchant[6] categorised anterior knee pain into several well recognised causes. Specific diagnosis in knee pain is still difficult[7,8] most civilian and service patients are grouped together as anterior knee pain or more recently 'Patello Femoral Stress Syndrome'. The true incidence of anterior knee pain within the service and civilian population is unknown, but thought to be greater than the numbers presenting to their GP. The natural history of this problem is also not well known, but several articles are now reporting medium and long term[9,10] follow up of these patients.

Application to join the Armed Services in the UK is voluntary and many servicemen look to this employment as a long term career. It is not surprising therefore that there is much reluctance to admit to the problem of anterior knee pain fearing repercussions on their medical category (fully medically fit, medically fit but with stipulated restrictions, temporarily unfit for

military duty). These restrictions are intended to prevent injured men from being inappropriately used and also to allow deployment of only appropriately fit servicemen. Medical downgrading results immediately in restriction of daily working and physical activities, in the longer term may interfere with potential for promotion and in extremes result in those felt to be permanently medically unfit being discharged from the Armed Services.

This study was set up with the intention of estimating the incidence of anterior knee pain in an active duty service population, assessing any work related risk factors and identifying any anatomical variations that may be associated with predisposition to this problem.

METHOD AND MATERIALS

293 active duty servicemen (100 Army and 193 Royal Navy) who by definition were fully medically fit or had only minor medical restrictions were interviewed and examined in relation to their knees. Complete confidentiality was assured to all participants. A questionnaire (Fig 1) was provided for completion by all who took part. A thorough clinical examination of the lower limbs and associated joints was undertaken by one of the two authors (one based with the Royal Naval and the other based with the Army personnel). 138 measurements were made on each subject, exact definitions for each variable were established prior to the commencement of the study. Radiology facilities were unavailable and therefore x ray investigation was not undertaken.

Many factors of everyday working life in the armed services have traditionally been held responsible for the presence of knee pain in service personnel. The many ladders and raised doorsills (known as "dwarf bulkheads") onboard a ship are frequently blamed in the Royal Navy whilst the carrying of heavy loads when deployed in the field" is often labelled as the culprit in the Army. Specific enquiry was therefore made about these factors.

Army personnel are required to undertake a regular Battle Fitness Test (timed one and a half mile run after a 1½ mile warm up run). This was felt to be a reasonable estimation of ability to perform full military duties and so was recorded. Recreational physical ability was quantified using the Tegner activity score.

The degree to which knee pain severi affected work and sporting activity w quantified using a visual analogue scale for ea

118 personnel admitted to knee problems. S had specific diagnoses: patella tendonitis, AC deficiency with marked anterior instability, h patellectomy osteoarthritis (and synthetic later collateral ligament) as a sequelae of trauma the right knee, patellofemoral osteoarthritis a chronic right lateral collateral ligament strai The remaining 112 individuals formed the stu group. The examination findings of this gro were compared with those of the 175 witho Patello-Femoral Stress Syndrome.

It was felt that the Royal Navy and Army stu groups constituted two separate populations a consequently the data from each group w subjected to analysis independently. Th numbers of patients suffering unilateral kn pain was small, each population was therefo combined with the bilateral knee pain gro forming two groups of patients of greater si (bilateral and left knee pain and bilateral a right knee pain groups). The results were th statistically analysed to determine norm ranges, any significantly different valu between the knee pain and control groups a thereby implicating some parameters that m predispose to patellofemoral stress syndrom Non parametric data was subjected to the Man Whitney U test and parametric data underwe Chi analysis.

The questionnaire return was 100%.

RESULTS

All patients were male. The mean age was 25 years (17.8 to 49.8) in the Royal Navy and 25 years (17.7 to 37.4) in the Army populatio One hundred and twelve patients were found suffer anterior knee pain (29 left, 27 right and bilateral). One hundred and seventy five m suffered on form of knee pain (127 RN and Army). The incidence of PFSS is calculated be 390/1 000 head of active duty servi population (324/1 000 RN and 515/1 000 Arm population).

The results of the parametric and no parametric data and any statistically significa findings are shown in tables 1, 2, 3 and 4. Son variables measured were of the same value

ithout variation for all groups and nsequently have not been listed

Pearson s (two tailed) coefficient of rrelation was calculated comparing the ceived level of pain severity (visual analogue ores) against the level of activity and work hieved (table 5)

ISCUSSION

he ranges obtained from examining each opulation can be readily seen in the above bles It is apparent that despite each variable ing strictly defined prior to commencement of e study there is still marked inter-observer iation in their measurement e g mean tibial lens angles and mean Q angles between the oyal Navy and Army populations This onfounding factor may be considered ligible as far as statistical analysis is oncerned as these populations have been aintained as separate It does however question e value of these variables in knee assessment if l inter-observer results obtained can display ich a wide divergence

The variables found to be consistently atistically different between the knee pain and pain groups (for both the Royal Navy and the rmy populations) are age, years in the armed rvices patellofemoral compression test (both ohlan s and the medial compression tests) and uat walk test

Patellofemoral stress syndrome appears to be ore prevalent in a slightly older population in the control It also appears with greater equency in those with longer duration of rvice in the military

No statistical difference was demonstrable tween the control and knee pain populations either branch of the services for the level of ysical activity achieved (Tegner score) or ility to perform normal working activity (BFT ne and number of ladders/dwarf bulkheads ossed) This implies that despite their knee ain the people within the affected population ere not measurably restricted in their working tivity

From the clinical data we found no nsistently statistically significant anatomical riant that was associated with patellofemoral ress syndrome Patellofemoral irritability could be reliably demonstrated on patellofemoral compression testing (Zohlan s medial compression and squat walk tests) not only in the affected knee but frequently also on the unaffected side

The body mass index was found to have statistical significant difference between the control and left/bilateral knee pain group in the Royal Navy population This difference was not found in the right/bilateral knee pain group nor in the Army population A similar situation is also found on Chi testing of association of knee pain with military rank in the Royal Navy right/bilateral knee pain group but none of the others In statistically evaluating so many variables it is not uncommon to have some false positive results The lack of consistency across the groups suggests that they are chance findings

On analysing the correlation between the knee pain groups perceived pain and limitation on physical and working activity it is not surprising to see strong correlation between the subjectively assessed visual analogue scores for work and sport pain severity (in both the Royal Navy and Army populations) In the Royal Naval population there was demonstrable correlation between the number of different ladders climbed dwarf bulkheads crossed and the total number of obstacles traversed but no statistically significant correlation could be demonstrated between any of these individual parameters and subjective severity of knee pain The Army population demonstrated no correlation between pain severity and physical/working activity measures There was also no suggestion that subjectively assessed knee pain was worse in those who had served in the forces for longer (for both Royal Navy and Army populations) These findings imply that employment within and duration of service in the armed forces are not, in isolation risk factors for patellofemoral stress syndrome

CONCLUSION

This survey provides information on normal values at knee examination of the knees in active duty servicemen

Anatomical measurements were found to be poor predictors of anterior knee pain with no consistently statistically significant difference between the groups

The wide inter observer variation in values obtained in some clinically measured parameters brings into question their usefulness in clinical assessment

The patients perceived limitation on sport and work (as assessed on a visual analogue scale) does not correlate with the level actually achieved (as measured on Tegner activity score, BFT time and number of ladders/dwarf bulkheads climbed) There is no statistically significant difference demonstrable in the level of work and physical activity between the knee pain populations and their controls

We were unable to corroborate statistically any correlation between patellofemoral stress syndrome and the factors 'traditionally held responsible (in the general military) for its origination

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Fig 1. Anterior Knee Pain Patient Questionnaire

1. Do you suffer from knee trouble/pain? No go to question 15
(please tick one) Yes go to question 2

2. What problem do you possess? Pain
(tick any that apply) Giving way (on turns/twisting)
Jerk (sudden stops/starts)
Swelling
Locking
Creptus/creaking
Other (please specify).

3. Which knee
(please tick one) Right
Left
Both

4. How often
(please tick appropriate) Daily
Weekly
Monthly
2-3 times per year
Other (please specify)

5. How long does it last
(tick most appropriate) Seconds
Minutes
Hours
Days
Never goes away
Other (please specify)

6. When present, how severely does it affect your work?
(please mark an X on the line below to indicate severity)

Unable to work at all

7. When present, how severely does it affect your sport/physical activities
(please mark X on the line below to indicate severity).

8. Have you ever been seen by any medical practitioner for your knee problem?
Nobody
Physiotherapist
MA/MA/FOMA
Medical Officer
Hospital doctor

9. Are you awaiting a hospital appointment
(please tick most appropriate, for all that apply)
None
Outpatient appointment
Investigation X-ray
MRI scan
CT scan
Other (please specify)
Hospital admission for Arthroscopy
Operation
Other (please specify)

10. Have you had any previous knee problems? (please specify (include injuries to knees and approx. date where possible)

11. What treatment have you had in the past? (tick as appropriate) None
Tablets Painkillers
Bracing
Other (please specify)
Physiotherapy
Arthroscopy
Other operation (state which if known)

12. What was the outcome of your treatment? Cured
(tick most appropriate). Improved
No change
Worse

13. Which was the best treatment for you? (please state)

14. Do you think that service footwear makes your knee problem worse? No
Yes (state which footwear and how it affects you)

15. How much time have you spent at sea/onboard ship?

16. What sport do you regularly take part in and to what standard?
(tick most appropriate)
Rugby International
Football County
Hockey Committee
Athletics Club/Ship
Swimming Sunday/Social
Other (please state). Occasional

17. Please give a brief description of the work that you perform.

18. Please record the number of times (approx.) that you step over dwarf bulkheads (tall at the bottom of a vertical hatch) and
In a descend ladders (count 1 for each time that you climb and 1 for each time you descend) In a normal working 24 hour period
Vertical ladders Angled ladders Dwarf bulkheads

19. **Thank you** for completing this form. Please add any other comments that you feel are helpful (continue overleaf if necessary)

Table 1. Demographic and questionnaire data

	Royal Navy							Army						
	No Pain	Lt pain	z	P value	Rt pain	z	P value	No Pain	Lt pain	z	P value	Rt pain	z	P value
Number	127	45			45			48	40			38		
Age mean	23.44	31.8	3.58	0.001	31.03	2.95	<0.01	24.2	28.15	2.38	<0.02	28.02	2.18	<0.05
S D	6.4	6.39			6.1			4.93	3.98			4.36		
min	17.79	23.35			22.78			17.87	18.64			18.54		
max	46.69	46.85			46.04			37.45	33.32			36.67		
Yrs in Army/Sea time mean	5.42	6.53	3.78	<0.001	7.32	3.47	<0.00	5.75	7.76	2.08	<0.0	8.08	2.78	<0.01
S D	4.22	5.33			4.87			4.47	3.63			4.25		
Equivalent rank	3.15	4	2.49	<0.2	4.34	2.42	<0.2	1.92	1.9	1.88		2.08	1.87	<0.05
Months in Boats mean								4.09	4.3			4.27		
S D								11	0.71			0.64		
Ladders angled mean	51.54	59.49			55.31									
angled range	0-300	0-652			0-652									
verbal mean	9.71	12.09			11.75									
vertical range	0-60	0-162			0-162									
DIH mean	87.15	101.5			102.4									
DIH range	0-500	0-721			0-721									
DFT time mean								8.81	9.05			9.03		
S D								0.6	0.94			0.82		
Tether score mean	6.14	5.04			5.55			8.3	6.49			6.85		
S D	1.84	2.44			2.27			1.4	1.46			1.47		
Min	3	2			2			4	3			3		
Max	9	9			9			9	9			8		
VAS work		1.65			1.83				3.19			3.74		
range		0-7.9			0-8.0				0-7.0			0-7.0		
VAS sport		4.14			4.21				4.85			5.48		

VAS= visual analogue score

Table 2. Examination data.

	Royal Navy							Army						
	No Pain	Rt pain	z	P value	Rt pain	z	P value	No Pain	Lt pain	z	P value	Rt pain	z	P value
BMI mean	24.88	26	2.06	0.05	25.31			25.65	25.74			26.30		
S.D.	3.23	3.24			2.77			3.78	3.73			5.23		
Hypermobility mean	1.25	1.09			1.82			3.58	[illegible]			6.68		
range	0-6	0-4			0-9			0-8	0-7			0-5		
Angulation Rt mean	87	88			87.44			88.13	88.25			87.85		
Rt S.D.	7.11	5.88			8.76			4.13	8.17			8.77		
Lt mean	86.33	87.78			47.83			88.13	88.80			88.38		
Lt S.D.	7.34	5.78			8.17			8.12	3.94			5.91		
Quads Bulk mean Rt	41.1	41.28			39.83			41.78	41.81			41.60		
S.D. Rt	3.81	3.83			3.61			3.31	3.05			3.86		
Quads Bulk mean Lt	40.20	41.13			40.72			42	41.38			41.69		
S.D. Lt	3.22	3.9			3.13			3.7	2.81			3.3		
TSA mean Rt	2.52	2.2			2.9			0.8	0.8			0.87		
S.D. Rt	2.58	2.87			3.51			2.72	2.70			2.94		
TSA mean Lt	2.55	2.88			2.87			0.71	0.8			0.85		
S.D. Lt	2.12	2.44			2.65			2.49	2.78			2.83		
Q angle R mean R1	13.78	12.82			3.11			7.8	8.62			8.60		
S.D. R1	3.98	3.18			3.34			2.81	2.60			2.5		
mean L1	12.28	12.69			13.87			7.42	8.87			8.87		
S.D. L1	2.86	2.29			2.88			2.52	2.80			2.47		
Q angle 30 relax mean R	13.68	12.38			12.40			1.15	10.76			1.28		
S.D. R1	2.72	2.71			3.13			2.97	2.78			2.1		
mean L1	13.72	13.99			13.54			10.9	10.12			10.1		
S.D. L	2.78	2.28			2.78			2.5	2.83			2.84		
Q angle 30 tense mean R1	12.85	12.18			12.33			8.44	10.51			10.51		
S.D. R	2.81	2.81			2.57			2.54	2.8			2.85		
mean L1	12.82	12.81			12.92			8.06	8.09			8.59		
S.D. L1	2.73	2.27			2.97			2.10	2.27			2.33		
Pop angle R1 mean	140.72	141.21			140.77			187.2	188.1			187.8		
R1 S.D.	8.72	22.88			18.55			11.82	12.11			12.28		
Pop angle Lt mean	187.28	182.78			147.81			188.8	147.7			187.52		
L1 S.D.	8.58	25.04			18.17			8.18	18.85			18.78		
SLR Rt mean	72.78	78.22			75.34			78.54	78.38			78.86		
Rt S.D.	9.86	12.22			10.36			8.81	12.21			8.24		
Lt mean	71.52	72.22			73.75			77.92	78.88			78.16		
Lt S.D.	10.56	9.66			10.81			9.22	11.68			10.8		

BMI= body mass index TSA=tibial sulcus angle Pop angle= popliteal angle SLR straight leg raise

Table 3. Examination data

Right knee pain	RN				Army			
	Knee No Pain	Rt Knee Pain	Total	p value	Knee No Pain	Knee Pain	Total	p value
Squat walk Rt NP	125	40	165		47	6	67	
PF		5	5		0	3	13	
PUF	2		2		1	5	6	
Total	127	45	172	< 0.01	48	38	86	< 0.001
Squat walk Lt NP	126	40	166		48	28	76	
PF	0	5	5		0	9	9	
PUF	1	0	1		0	1	1	
Total	127	45	172	< 0.01	48	38	86	< 0.01
PFC Zohlan Rt NP	124	37	161		15	5	20	
PF	0	8	8		3	18	21	
PUF	3	0	3		30	15	45	
Total	127	45	172	< 0.001	48	38	86	< 0.001
PFC Zohlan Lt NP	126	43	169		18	6	24	
PF	0	2	2		2	14	16	
PUF	1	0	1		28	18	46	
Total	127	45	172		48	38	86	< 0.001
LFC MCT Rt NP	123	40	163		45	23	68	
PF	0	4	4		1	13	14	
PUF	4	1	5		2	2	4	
Total	127	45	172	< 0.05	48	38	86	< 0.01
LFC MCT Lt NP	126	42	168		44	25	69	
PF	0	3	3		2	11	13	
PUF	1	0	1		2	2	4	
Total	127	45	172		48	38	86	< 0.05

NP= no pain

PF= familiar pain

PUF= unfamiliar pain

PFC= patello-femoral compression test

MCT= medial compression test.

Table 4 Examination data

Left knee pain	RN				Ann			
	Knee No Pain	Rt knee Pain	Total	p value	Knee No Pain	Knee Pain	Total	p value
Squat walk R NP	125	39	164		47	28	75	
PF		6	6		0	11	11	
PUF	2		2		1	0	1	
Total	127	45	172	< 0.01	48	39	87	< 0.01
Squat walk L L NP	126	37	163		45	29	74	
PF	0	8	8		0	14	14	
PUF	1	0	1		0	0	0	
Total	127	45	172	< 0.001	46	40	88	< 0.001
PFC Zohlan Rt NP	124	41	165		15	5	20	
PF	0	4	4		3	18	18	
PUF	3	0	3		30	20	50	
Total	127	45	172	< 0.02	48	40	08	< 0.001
PFC Zohlan Lt NP	126	41	167		18	5	23	
PF	0	4	4		2	18	20	
PUF	1	0	1		28	17	45	
Total	127	45	172	< 0.02	48	40	88	< 0.001
PFC MCT Rt NP	123	43	166		45	26	71	
PF	0	2	2		1	0	18	
PUF	4	0	4		2	5	7	
Total	127	45	172		48	40	88	
PFC MCT L NP	128	40	168		44	22	66	
PF	0	5	5		2	15	17	
PUF	1	0	1		2	3	5	
Total	127	45	172	< 0.01	48	40	88	< 0.01

NP= no pain

PF= familiar pain

PUF= unfamiliar pain

PFC= patello-femoral compression test

MCT= medial compression test

Table.5. Coefficents of correlation for perceived pain against work/physical level achieved

Royal Navy population.

	Severity work	Severity sport	Tegner score	Vertical ladders	Angled ladders	DBH	Ladder total
Severity work							
Severity– sport	0 513[α]						
Tegner score	0 133	0.060					
Vertical ladders	0 151	0 054	0 197				
Angled ladders	0 168	0 202	0 222	-0 030			
DBH	0 010	0 750	0 100	0 70[α]	0 223		
Ladder total	0 045	-0.053	0 187	0 895[α]	0.292[β]	0.961[α]	
Yrs in Army/at sea	0.233	-0 078	0 072	-0 102	-0 070	0 066	-0 096

Army population.

	BFT time	Tegner score	Severity work
BFT time			
Tegner score	-0 180		
Severity work	0 282	0 076	
Severity sport	0 003	0 010	0 743[α]

α– correlation significant p< 0 01 (2 tailed)
β– correlation significant p< 0 05 (2 tailed)

Royal Naval Medical Service 2004 90 3 135 138

Clinical

The Pathophysiology of Exertional Heatstroke

urgeon Lieutenant Commander J E Smith MBBS MSc MRCP
FAEM RN
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BSTRACT

xertional heat illness remains a major cause of orbidity and occasional mortality within the rmed Forces This review explores the normal sponses to heat known causes of exertional atstroke and suggests possible answers to the estion of why one member of a military non llapses with heat stroke while matched ntrols at his side remain unaffected

NTRODUCTION

eat illness is an unchecked increase in body re temperature that occurs when intrinsic or trinsic heat generation exceeds the capacity of meostatic thermoregulation Consequential sfunction at cellular and organ level results in spectrum of disease from minor heat cramps rough symptoms of heat exhaustion to life rentening heatstroke These are terms metimes used to describe separate entities but obably represent a continuum of disease verity Heatstroke is the most severe form of aess and is characterised by hyperthermia th neurological impairment It is associated th haematological abnormalities and may ause multi organ failure and death

Classical or environmental heat illness (CHI) commonest in those whose thermoregulatory ntrol mechanisms are inefficient such as the ry young or elderly and those subjected to treme temperatures Clusters of cases of assical heat illness occur following heat waves 00 heat related deaths were reported following e Chicago heat wave of 1995) and the annual lgrimages in the Middle East

Exertional heat illness (EHI) typically affects ung athletes or military personnel who are shed to their physical limits and suffer a nical and pathological syndrome caused by an ability to dissipate heat produced by muscular ercise

This review explores the normal response to heat stress and summarises the current theories behind the pathophysiology of this important condition

NORMAL RESPONSE TO HEAT

As a result of exercise the body s core temperature rises The thermoregulatory centre is situated in the preoptic nucleus of the anterior hypothalamus and stimulation of this nucleus following a rise in core temperature due to a high environmental temperature or heat produced during exercise results in autonomic nervous system mediated vasodilatation and sweating Heat is then lost from the body through convection radiation and evaporation of sweat from the skin summarised in Box 1

PATHOPHYSIOLOGY

When heat production exceeds the body s capability for heat loss the core temperature rises and if this continues heat illness occurs Hyperthermia may therefore be produced by excessive heat production reduced ability to lose heat or a combination of both Exertional heat illness can occur at any time of year and is a reflection of intrinsic heat production rather than external heat This is illustrated by a case series of 82 patients in which 30% of cases occurred in the spring and many cases occurred at night or in the early morning However the temperature and humidity of the environment are important in exertional heat illness as the heat generated by exercise is more difficult to dissipate if the ambient temperature and humidity are higher

EHI typically affects young athletes and military personnel and is usually the result of heavy physical exercise in the presence of predisposing factors such as dehydration inadequate acclimatisation to a hot climate concurrent illness obesity lack of sleep wearing too much clothing alcohol ingestion and poor

Conduction
Direct transfer of heat to another object or substance in contact with the source until the temperature of the second substance reaches equilibrium with the first

Convection
Transfer of heat to a circulating liquid or gas It often augments conduction by movement of the second substance thereby preventing equilibrium being reached and facilitating continuing delivery of heat from the source Examples would include standing in a breeze or in a moving body of water such as a stream

Radiation
Transfer of heat to an object not in direct contact with the source for example heat from the sun reaching the earth

Evaporation
Heat can also be transferred indirectly through the evaporation of sweat This is due to energy transfer from the body to the sweat causing it to become vapour If environmental temperature exceeds body temperature this is often the only method by which heat may be lost It is dependant on the level of humidity in the surrounding environment, as sweat will not evaporate into fully saturated air if the air temperature is at skin temperature or above

Box 1 Normal response to heat – mechanisms of heat loss

cardiovascular fitness [44] A previous episode of heat illness is also an important risk factor [78] although this may in part reflect a persistence of other pre existing risk factors such as those outlined above Motivation to succeed in front of peers and the preservation of machismo is an important contributing factor and may help to explain why there is a low incidence of female EHI patients

Occasionally no predisposing factors are found and the reason why one previously fit individual is affected while a matched control remains unaffected is still uncertain Several theories have attempted to explain this phenomenon and are summarised in Figure 1

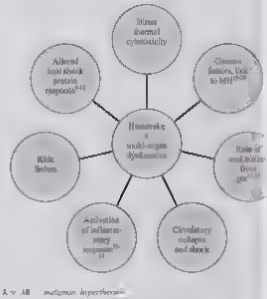

Figure 1 Pathophysiological theories of heatstroke

Thermal effects and heat shock proteins
Direct thermal toxicity is a result of denaturation of proteins and damage to other cellular structures Cells express proteins that under conditions of heat stress change their tolerance to heat and confer some protection for that cell from the effects of further heating of the cell [9 12] It is thought that these proteins bind to other proteins to prevent them being denatured by the rise in temperature If these heat shock proteins are not expressed in the normal way or their production is blocked the cells are more susceptible to damage by the heat [1]

Intestinal permeability and the role of endotoxins
Normally the intestinal mucosa forms a biological barrier to intestinal flora and the endotoxins they produce There is experimental

vidence to suggest an increase in intestinal rmeability following exercise and heat stress at may result in an increase in endotoxin oncentration in the circulation In one animal udy using a rat heatstroke model heat stress used hypoxic damage to the small bowel and a similar experiment permeability to ndotoxins was increased following heat stress uman studies have provided evidence of creased intestinal permeability to labelled gars following exercise [4] and direct easurement of serum lipopolysaccharide ncentration showed an increase following an tramarathon in 18 normal athletes [5] compared by a decrease of corresponding tibodies suggesting they had been consumed owever despite these findings there is no direct idence that the increase in endotoxins is lated to the onset of heatstroke or the activation the inflammatory response

Inflammation and cytokines

eatstroke provokes a generalised inflammatory sponse with an increase in cytokines such as dothelin von Willebrand factor tumour crosis factor and interleukin 6 similar to an isode of severe sepsis [26] There is also idence of changes in T cell and norepinephrine ncentrations with a reduction in T helper cell tivity and an increase in cytotoxic T cells and tural killer cells [5] This inflammatory response oduces increased vascular permeability akage of intravascular fluid and activation of e coagulation and fibrinolytic pathways sulting in multi organ failure and disseminated travascular coagulation typical of severe atstroke

Genetic influences

ere are several case reports suggesting that me individuals who suffer an episode of atstroke may have a genetic predisposition to e condition due to an abnormality of cellular uscle structure This may be similar to other herited skeletal muscle abnormalities such as alignant hyperthermia (MH) an abnormality the ryanodine receptor which manifests itself an abnormal response to inhalational aesthetic agents and other drugs such as cetyl choline Muscle biopsies taken from ll serviceman who had suffered episodes of H and their fathers showed abnormal sponses to halothane and ryanodine [6] There ve been similar cases where patients who had ffered an episode of EHI were subsequently found to have a susceptibility to malignant hyperthermia after muscle biopsy [30] An atypical case has recently been described where a young patient known to suffer from MH underwent exercise and gradually over the next few hours (following cessation of exercise) developed a hyperthermic response and subsequently died [22] This is not typical of exertional heatstroke per se as the symptoms did not appear during exercise and it would suggest a reaction similar to MH that was precipitated by the trigger of exercise

Individuals with a high proportion of type II muscle fibres are at increased risk of exertional heat illness [23] This is supported by data from Hsu et al who analysed muscle biopsies from heat illness patients and found a predominance of type II fibres compared with controls [24] Type II muscle fibres are larger fast twitch fibres that have less capillarity and are less energy efficient than type I fibres which may result in more heat accumulation in the muscle tissue Gardner and Kark identified a case of EHI in a recruit with sickle cell trait and postulated that this should also be considered an independent risk factor for heat illness [25]

SUMMARY

The reason why one member of a military unit collapses with heat stroke while matched controls at his side remain unaffected is still not clear Several risk factors have been identified, and it may be that a combination of these factors may render the susceptible individual more likely to suffer an episode than others

There are several theories regarding the underlying cellular mechanisms behind exertional heat illness There is circumstantial evidence to support each one but little confirmatory clinical evidence to settle the issue Given the size of the military population at risk, screening for genetic diseases is impractical at entry to the Services Improved education among both medical and executive personnel has reduced the incidence of exertional heat illness over the last few years and thankfully mortalities are now rare Much work has already been done by the Tri Service Heat Illness Working Group including contribution to the publication of a recent Joint Service Publication [28] Many heat illness patients are assessed in the Heat Illness clinic at the Institute of Naval Medicine where clinical advice should be sought if necessary However there are ongoing opportunities for the UK Defence

Medical Services to investigate this group of patients through structured data collection and follow up and make further contribution to the international quest for the answer to the riddle of exertional heat illness

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Clinical

Displaced Distal Fractures of the Radius and Ulna in Children: The Incidence of Re-displacement in Plaster

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Keywords Remanipulation Distal Radius Ulna and Children

INTRODUCTION

Fractures of the forearm are common in children These injuries are usually treated conservatively with closed reduction and application of plaster Perfect anatomical reduction is not always necessary since remodelling of malunion may correct any residual deformity Studies by Armiento et al[1] Matthews et al[2] and Tarr et al have reported that except in very young children residual angulations of the forearm greater than 10 degrees should be corrected since remodelling is unpredictable Angulations affect the range of pronation and supination of the forearm[3] Fuller and McCullough established that loss in the range of pronation and supination is proportional to the degree of rotational malunion Some authors have advocated surgical treatment of displaced forearm fractures in children using pinning fixation[4,5] intramedullary nails[6,7,8] pins and plaster and external fixation[9] The purpose of this study is to analyse the results of forearm fractures in 52 patients treated between July and September 1995

PATIENTS AND METHODS

Between July 1995 and September 1995 at the Royal Victoria hospital for sick children in Belfast we treated 52 children under the age of 11 years with unilateral acute displaced fractures of the distal diaphysis or metaphysis of one or both bones of the forearm There were 32 boys and 20 girls Of these five (9 6%) required percutaneous K wire fixation one (1 9%) required open reduction and internal fixation and 46 (88 5%) were treated with manipulation under general anaesthetic and application of long arm plaster Eleven (21 2% of the total and 23 9% of those manipulated under GA) required remanipulation of the fracture

The indications for percutaneous pinning were completely displaced fracture/s of one or both bones of the forearm and fractures with angulations of >15 degrees

Operative techniques

The patient was anaesthetised and the injured limb positioned on a radiolucent table Closed reduction was attempted under image intensification When the fracture was unstable after closed reduction or when closed reduction failed percutaneous K wiring was performed At least 50% apposition of the fractured bone ends was necessary to allow K wiring

Percutaneous K wiring was performed under image intensifier control using wires of 1 6 mm in diameter The wire was inserted through Lister's tubercle or the radial styloid for fractures of the radius When both bones of the forearm were fractured the radius was reduced and wired first If the ulna had then reduced spontaneously ulnar wiring was usually not performed but where the reduction was unstable the ulna was also fixed The K wire was passed under direct vision using the image intensifier across the fracture site as far as the distal metaphysis taking care not to breach the growth plate

The limb was then placed in a long arm plaster of paris with the elbow at 90 degrees of flexion and the forearm at various degrees of rotation according to the level of the fracture. The cast and the K wires were removed at four to six weeks after the operation in the outpatient's clinic without anaesthesia.

Radiographs of the whole forearm including the wrist and elbow on the same film were reviewed to determine the site and pattern (transverse, oblique, spiral or comminuted) of the fracture, the amount of displacement and angulations and the status of the epiphysis.

RESULTS

Both the radius and ulna were fractured in 47 patients, the radius only in 4 and ulna only in one. The initial angulations of the radius ranged from 10 deg to 50 deg in the lateral plane and 10-30 deg in the antero posterior plane. For the ulna the angulations were 12 to 67 deg in the lateral plane and 5-40 deg in the anteroposterior plane.

Of the 52 patients, 36 had a successful closed reduction. 11 had to be remanipulated for loss of position at one week after closed reduction and five had successful K wiring. The mean hospital stay was 1.5 days (1-2). 90% were discharged within one day.

DISCUSSION

In recent years, treatment of forearm fractures in children has been changing and at present surgical management tends to prevail. Conservative treatment, closed reduction and immobilisation were prevalent in the 1960s and the criteria used to achieve an acceptable reduction varied[2,5,18]. Angulations should be no greater than 10 degrees[4,6,9].

Nielsen[8] reported that 8% of the cases they studied of the fractures of the forearm shaft required open reduction and plate fixation with excellent functional outcomes. However this technique has a higher risk of infection when compared to closed reduction and percutaneous K wiring since it entails increased soft tissue dissection, longer scars and occasionally a second procedure for removal of the plate[10].

Good results for intramedullary elastic nails have been reported [9]. Few complications such as skin irritation from the tips of the nails and sensory neuropathy were reported as well.

Velo et al[7] has reported good results for pins and plaster in patients for whom satisfactory closed reduction could not be achieved. No complications were encountered. It is widely accepted that open reduction and internal fixation are rarely necessary and it is only recommended for older children after closed reduction has failed[2,4,6].

The results of this study suggest that the incidence of remanipulation at one week following loss of position in plaster is over [illegible] percent. Percutaneous K wiring with immobilisation in plaster is probably a better option for the treatment of unstable fractures of the distal end of the radius and ulna.

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Clinical

Graduated Compression Stockings Reduce the Venous Velocity Augmentation of Foot Pumps

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ABSTRACT
The use of the A V Impulse System of foot pumps and graduated compression stockings to reduce the incidence of thrombo-embolic disease after total hip arthroplasty is well recognised It is not known if they have a synergistic effect as all clinical trials have used them in combination

We examined the effect compression stockings had on the ability of the A V Impulse System to accelerate peak venous velocities in the common femoral vein in ten healthy volunteers using a duplex scanner

The use of foot pumps without stockings produced the greatest increase in peak venous velocity and this was 34% greater than using a foot pump with stockings

It is not known if this difference could account for a reduction in thrombo embolic episodes and so we propose a randomised clinical trial

INTRODUCTION
Foot pumps such as the A V Impulse System (Novamedix, Andover UK) are a recognis form of thrombo embolic disease prevention lower limb orthopaedic surgery

Reported incidences of deep vein thrombo after total hip arthroplasty using the A V Impul System are 10 – 18%[1] compared to 50% historical control groups[2]

Foot pumps function by inflating a bladd contained in a boot worn around the foot whi empties the venous plexus of the foot described by Gardner and Fox[3] in 1983 T emptying of the plexus increases the velocity the deep venous system of the lower limb Tl is felt to cause turbulence at the valve cusps t site of initiation of thrombi and so preve thrombus forming

A recent article by Fleming *et al*[4] usi volunteers has demonstrated the effect thr different positions has on the augmentation venous velocity using the A V Impulse Syste They compared peak venous velocities in t common femoral vein in horizont Trendelenburg (25° foot up) and rever Trendelenburg (25° foot down) positions Th found that the greatest increase in veloc during pumping occurred in a rever Trendelenburg position The author hypothesised that in a foot down position t physiological venous foot pump expand

aking the pump more effective

Graduated compression stockings (GCS) are so a recognised but contentious form of rombo-embolic disease prophylaxis They ive been shown to increase velocity in the moral vein' by applying a graded compression ong the lower limb from distal to proximal ith the highest pressures at the ankle reducing e cross sectional area of the capacitance ssels

The manufacturers of the A V Impulse System ive recommended that it be used with aduated compression stockings We are aware no studies demonstrating that foot pumps and CS have a synergistic effect.

We have hypothesised that GCS may reduce e efficiency of foot pumps by preventing filling the venous plexus in the foot

ETHOD

e designed a cross over trial to measure peak nous velocities in the common femoral vein th a duplex scanner in volunteers under four atment conditions as below

GCS off pump off
GCS off pump on
GCS on pump off
CGS on pump on

Ten healthy volunteers were recruited and ere screened to have no history of thrombo-bolic disease (8 males and 2 females median e 26 8 years range 24 – 31years)

During each condition we measured three quential readings of peak venous velocity hese were taken at a point just distal to the try of the great saphenous vein into the moral vein and were repeated on the contra-teral limb Each value was recorded and used calculate a mean peak venous velocity (PVV)

All measurements were carried out to a ascular laboratory by a principal vascular ysicist (TF) under standard conditions using ATL HDI 5000 (Advanced Technology boratories UK Ltd Letchworth) duplex anner with a flat linear array probe at 4 MHz

The volunteers were measured for GCS (Preventex anti-embolism stockings Parema, Loughborough UK) using thigh and calf circumference and leg length After putting the stockings on they were allowed a five minute period of rest

The volunteers were connected to the A V Impulse System as per the manufacturer s instructions When the pump was switched on it was allowed a minimum of five minutes to warm up The pump inflated each boot for a three second period every twenty seconds

A repeated measures analysis of variance model was fitted to the data and in order to satisfy the requirements of a parametric approach these data were transformed to a logarithmic scale prior to analysis and results presented as a geometric mean

RESULTS

A significant interaction was found to exist between the two treatment factors ($F = 11.93$ $p = 0.001$) indicating that the benefit of the pump was related to stocking use

The best observed combination of treatments by producing the highest mean peak venous velocity was with the pump on but without stockings This produced a relative gain of at least 34% compared to the other three treatment conditions Adjustments for multiple comparisons were made using Tukey s test

We found no significant difference between left and right legs ($F = 2.33$ $p = 0.131$)

The results are tabulated in Table I and the geometric mean values can be found in table II

DISCUSSION

If we assume that the efficiency of a foot pump is measured by its ability to increase the peak velocities in the deep venous system then there is a significant reduction in augmentation by using graduated compression stockings with the A V Impulse System

In their original paper Gardner and Fox[5] discuss filling of the plantar venous plexus by a vein on the dorsum of the foot These vessels are assumed to be under most compression by the stockings This may reduce filling of the venous foot pump so rendering the pump less effective

Table I Mean peak venous velocities under the four conditions

Subject	Leg	GCS off		GCS on	
		Pump off	Pump on	Pump off	Pump on
		cm s^{-1}	cm s^{-1}	cm s^{-1}	cm s^{-1}
1	L	9.2	18.4	17.9	16.8
2	L	16.8	40.5	18.9	19.3
3	L	18.9	35.6	21.9	32.2
4	L	25.2	31.5	24.1	20.6
5	L	18.4	18.7	20.5	19.2
6	L	17.5	27.7	14.4	14.7
7	L	18.7	16.4	22.6	17.3
8	L	21.0	34.2	25.4	29.6
9	L	16.6	28.3	12.0	16.0
10	L	19.3	34.8	19.0	22.5
1	R	6.8	16.2	10.9	14.1
2	R	12.1	23.7	22.0	18.6
3	R	12.2	41.6	18.1	18.7
4	R	23.3	30.1	20.4	20
5	R	28.6	22.4	30.4	15.5
6	R	14.8	20.8	12.1	13.2
7	R	24.9	25	21.3	23.5
8	R	14.3	19.8	20.2	26.1
9	R	17.8	27.6	11.9	18.7
10	R	15.7	35.1	14.1	27.7

Table II Geometric mean values of peak venous velocity

GCS	Pump		Ratio
	OFF	ON	
LFF	[illegible]	[illegible]	[illegible]
N	18.0	19.7	1.5
Total	7.5	[illegible]	1.9

This effect would be the same as adopting a Trendelenburg (25° foot up) position as in the paper of Fleming *et al*[6]

Compression stockings are felt by most to be beneficial in the prevention of thrombo-embolic disease but the evidence is controversial and Hull[3] found that they produced no significant reduction in the DVT rate

We can only speculate whether in a clinical situation the combination of foot pumps and GCS is likely to result in a higher incidence of DVT than foot pumps alone

The experimental studies of Andrews[5] Villewich[8] and Fleming[6] looked at the effect of limb position and venous haemo-dynamics including pressure and cycle settings during pumping but they did not use compression stockings In the three clinical trials of Fordyce[1] Santori and Warwick[4] using the A V Impulse System compression stockings were used as detailed by the manufacturer so direct comparisons between clinical and experimental studies are not possible

Keith[7] looked at GCS with other intermittent pneumatic devices and found that the combination did not produce a synergistic augmentation of peak venous velocity He suggested that GCS produce a relative narrowing of the deep veins and may increase mean venous velocity but not peak venous velocity This increase in mean venous velocity may be beneficial in reducing risk of thrombosis as stockings tend to be worn continuously and not intermittently as with foot pumps However several forms of GCS are commercially available and may have markedly differing pressure profiles

Another factor is the effect of the devices on vessel wall sheer stresses Foot pumps are known to trigger a hyperaemia after pumping this effect is felt to be as a result of vessel wall shear stresses[12 13] causing release of endothelial derived relaxing factor which lowers the vascular resistance of the accompanying arterioles and so increases blood flow to the limb a positive effect GCS however by reducing the capacitance of the vessels may reduce the shear stresses that the vessels are exposed to and so may not trigger this hyperaemia

CONCLUSION

We have demonstrated experimentally that the A V Impulse System is less effective at augmenting peak venous velocity in healthy volunteers when used with graduated compression stockings than when used alone

It should not be assumed that the combination of graduated compression stockings and foot pumps have a synergistic effect in reducing the incidence of thrombo embolic disease in patients undergoing lower limb arthroplasty We propose to conduct a prospective randomised trial to evaluate whether the A V Impulse System is more effective at reducing the incidence of thrombo-embolic disease when used alone or in combination with graduated compression stockings

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Book Reviews

he High Altitude Medicine Handbook. Third dition By Andrew Pollard and David Murdoch adcliffe Medical Press 2003 ISBN 1 85775 849 Paperback pp £93

The previous editions of this book are well nown to me so I was familiar with the general yle and content which it purports is targeted at edical practitioners travel medicine specialists pedition doctors and other professionals who ve healthcare advice to travellers As such this ook fills the middle ground between definitive edical text and lightweight back pocket aide emoir It is not (and does not confess to be) a omprehensive review on the subject and ilberately avoids the complicated (and still completely understood) pathophysiology of HA edical problems the reader interested in this pect is better directed to the definitive tome on e subject by Ward, Milledge and West The ithor s attempts to hold this middle ground do ean that the text is a little light and versimplified in some areas but the more ositive reader is appeased with a mprehensive list of references and suggested ading lists at the end of most chapters.

The main guts of HA medicine occupies Chapter wo of the book and revolves around a triad of terlinked conditions that form part of a thological continuum namely Acute Mountain ckness (AMS) High Altitude Pulmonary edema (HAPE) and High Altitude Cerebral edema (HACE) In case you are concerned the al letter of the HAPE and HACE acronym mirror e US spelling of the word which is in common uropean parlance Given the importance of these nditions it is perhaps surprising to find less then 5% of the book now dedicated to it and I would ve liked to see it expanded with perhaps more ve histories and a little more discussion on eatment options Many areas of HA medicine articularly therapeutic best practice) remain ontroversial In the book s quest for brevity the ader is left unaware of where these controversial eas exist and is fed the author s consensus view thout any amplifying explanation

The subject of children at altitude is not to my owledge covered comprehensively in any other xt and the expanded Chapter Four fills a much eeded gap in this area. The advice given is agmatic and will be welcomed by physicians involved in advising parents of such children In contrast perhaps is the next chapter that deals with climatic injuries I found this section to be incomplete and inaccurate and the Service reader would do far better skipping this and referring to JSP 539 as the definitive guide on Heat Illness and Cold Injuries The re warming temperature suggested for frostbitten appendages is incorrectly given as 37 C whereas the consensus is between 38°C 42°C in most other publications (including Service guidelines) The practical issues of such re warming are not discussed at all suggesting the authors have more theoretical knowledge than hands-on experience in this area

The chapter covering chronic disease pregnancy and contraception at altitude is compact but valuable and in particular the advice given on OCP usage at altitude is balanced and informative to the reader who may be advising female mountaineers or trekkers After a brief foray into training and nutritional aspects of high altitude the book devotes a chapter to non specific travel related diseases including vaccinations The latter is obviously not country specific and not current and cannot therefore be used as a reference for travel advice The final chapters of the book are a bit of a hotchpotch and include general management of injury and illness in the mountains moral ethical and legal issues but do culminate in a number of useful Appendices including a HA fact sheet that can be reproduced for patients Appendix I offers up a suggested kit HA medical kit list Whilst individual preference will always stimulate debate on this subject there were some notable omissions (e g sutures) and errors (the inclusion of Co Trimoxazole for routine use) that suggest the authors have not used this kit list in anger for some time.

On balance I feel this book fills an important niche in the available literature on the subject and provides an easily digested reference for the busy physician I would suggest it is essential reading for a HA medicine novice and will give a good overview on all the main subject areas of this discipline its biggest value for the more experienced HA doctor is the wealth of well organised references that will allow a more in depth analysis of any subject

Surgeon Captain A Hughes RN
PMO HMS NEPTUNE

Career Options in General Practice
Aquino & Jones Radcliffe Press 2004
ISBN 1 85775-601-0

General Practice has seen a great many changes over the past decade Changes that have been driven through by successive governments has led to a shift of care previously the preserve of secondary care, into the realms of primary care The subsequent increase in workload together with the expansion of responsibility has led to an inevitable diversification of skills in primary care In the same period General Practice postgraduate medical education and training have also become more formalised

General Practice has had to respond with the result that the traditional role of the general practitioner has altered It has become common for GP s to ease the burden by having appointments outside their Practice in areas related to medicine and for GP s to change Practices throughout their careers

The authors recognise these changes and set out the options for GP s in various chapters The chapter on Partnerships describes the benefits and pitfalls of various employment models in primary care including those of partnerships salaried partners and salaried principals For the complete novice this chapter provides a fascinating insight into this complex world and in doing so provides salutary lessons of what happens when it all goes wrong The choice of Practice becomes a balance between how hard you want to work and the salary that you want at the end The workload triangle is a useful model that seeks to assist individuals to match their own expectations to the Practice most likely to fulfil them For those daring to venture out into the NHS the book is worth obtaining for this chapter alone The financial complexity and pitfalls encountered by some are worthy of note.

Chapters on Academic General Practice Postgraduate Education medical writing and flexible working provide examples of how as a general practitioner you can expand your horizons These chapters only scratch the surface of the subjects and anyone considering these options would be better served seeking out more definitive texts There is then an assortment of other interests included in the chapter entitled Assorted Hobbies The prison service occupational health sports medicine get a paragraph each with the entry on GP s wi Special Interests fairing little better No mentio is made of General Practice within the Arm Forces which is a disappointment

Overall the book is easy to read and can b comfortably read in one sitting It is informativ on the subject areas close to the heart of th authors but a little light on others It could not b regarded as a definitive text but provides food f thought

Surgeon Commander P A Hughes RN
Advisor in General Practice

Scientific Writing - Easy when you know ho
By Jennifer Peat Elizabeth Elliott, Louise Bau and Victoria Keena
(pp 312 £22 50)
BMJ Books 2002
ISBN 0 7279 1625-4

Oh good another manual on how to write scientific papers as if there aren t enough du articles to read already To be fair the purpose a scientific article is to convey a message ofte simple but which is commonly based upon larg quantities of data, possibly arising from complex experiment and data analysis As suc scientific articles are never likely to b considered as a pleasurable read althoug papers could be easier on the reader if autho paid heed to the advice given in this informativ and surprisingly entertaining book.

The book provides clear and simple advice o how to write scientific papers and mo importantly, how to get them publishe Considering the wide variety of scientif journals available it should be too difficult f almost anything to be published the trick is publish well and somewhere where it has a goo chance of having some impact or consequence

To aid potential authors the book guides u step by step through every stage, negotiating th editorial process and finally to the finish publication Each chapter begins with quotation and contains more throughout whic ease our reading and understanding Examples relevant websites for further informatio improve the usefulness of the book.

Even for the experienced, and well published author there will be helpful advice and information such as the rules for writing numbers for example numbers less than 10 are written as words, and those larger as a number rules that many of us seem to have an understanding of but it is good to see the advice formalised

The book also contains good advice on how to grant the authorship of published work which can be a source of animosity This should help to smooth over the troubles that can arise when large numbers of people are involved in studies, often with varying levels of input and effort In terms of authorship the advice given in this book should inform all of the responsibilities and entitlements of those involved in scientific or clinical studies

The authors have written this book in the style that they recommend others follow it is clear concise and contains a large amount of useful information Much thought has been given to this book and the author's efforts ensure that this is an excellent source of advice for scientific and clinical authors

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Letters to Editor

from
Mrs Eva Fitzpatrick

To

The Editor
The Journal of the Royal Naval Medical Service
Dear Sir

The article on burns in No 2 of Volume 90 of the Journal reminded me of two separate experiences of helping to care for burn cases in WW2
As a Red Cross Volunteer (V A D) one was expected to help trained hospital staff when and where required
In September 1940 to the P A I (Workhouse) in Hemel Hempstead which was receiving air-raid casualties brought in to the hutted hospital in the Workhouse yard two or three times a week by road from London 25 miles away Our trained staff were mostly though not exclusively Great Ormond Street Medical Officers some G O S probationer nurses also several Q A Army Nursing Sisters two at least of whom had survived Dunkerque Among other casualties we received those from the destruction of the Tottenham Court Road Y M C A , one of whom had a severely-burned right arm and shoulder The prescribed treatment as I recall it, was the forcible immersion of the damaged limb into a bath of hot saline the patient being still in bed in the ward Four staff were necessary to accomplish this I thought the treatment medieval but I was there to do as I was told and not to express opinions In spite of his suffering the patient made a good recovery
In 1943 I transferred to the Royal Navy (RN/VAD) After nearly a year running one of the several WRNS Sick Bays in Devonport (there were more than four thousand Wrens in Plymouth in the months leading up to D Day) I was called back to RNH PLymouth at 5 minutes notice one morning in July 1944 to complete a team of eight (8) V A D s assisting four (4) Q A R N N S Sisters on Ward A2

here had b[illegible] Plymouth [illegible]
involving enemy [illegible] aft which had [illegible]
HMCS Matane A gi[illegible] hit Matane [illegible]
bursting the steam [illegible] the de[illegible]
member (Scott) the sev[illegible] ling of fou[illegible] and
lesser injury to the Engine-[illegible] Officer The [illegible] Medical
Officer who attended the wounded [illegible] sen set [illegible] so and
saline drips immediately and they were landed by [illegible] or boat
at Millbay late in the evening. The assessment on arrival
at RNM being that the four ratings had [illegible] chance of survival
having burns (scalds) on more than [illegible] in one case
more than half of their skin area [illegible]
n the landing outside A2 Ward [illegible] unduly alarm the
patients already in A2 The drips [illegible] maintained and they
were extensively wrapped in dry [illegible] bandages [illegible] eyes
only being visible
However in the morning they were [illegible]
admitted and everyone turned-t
A Sick Berth Chief Petty Officer [illegible] with a S[illegible]
Berth Petty Officer and number [illegible] dealt [illegible]
of the non-burn patients as well [illegible]
leaning and so forth and very [illegible]
too Surgeon Commander George P[illegible]
Captain) Royal Navy was MOIC the S[illegible]
Surgeon Lieutenant Moss R N V R was [illegible]
Registrar and was present on A2 Ward [illegible]
the 24 hours
The names of our patients were Jackson J[illegible]
Bonfonte Most of the time I helped QARNNS M[illegible]
or Monfonte the worst of the burn cases [illegible]
ne twice daily using flavine swabbings [illegible]
and gauze bandaging
Sister McCloughlin was UCH-trained and was [illegible]
nurse and dresser She had been on M[illegible]

Penicillin [illegible] w wonder-drug, was given by four-hourly intra-muscular injection into the thigh, the patients' lower limbs having been spared much damage
The Penicillin not then in production in the United Kingdom was manufactured in Des Moines, Iowa and was flown to this country by the relief bomber crews of the U S Army Air Corps -our splendid S E C P O making darned sure that there was always an abundant supply reserved for A2 Ward
The twice-daily dressings must have been exhausting for the patients Morphine was given before they were started and sips of brandy when requested during the dressing sessions Sister Mc Coughlin was a most humane woman
I was told at the time that it was a Naval Dental Surgeon Surgeon Lt Commander Bunyan R N V R who had devised the Bunyan bags in which the patients hands were floated It was a brilliant idea the hands suspended in (I think) Eusol fluid were in less pain than if resting on a solid surface the fingers could be encouraged to move and the tendons to stretch The decayed flesh and debris was drained through the floor of the bag into a bucket ?Eusol was added as a fresh infusion from the top of each bag I do not know if any plastic surgery became necessary for the Matanes but I doubt it One aspect of the time which will be long remembered by those in A2 Ward or working there was the all pervasive stench of putrid flesh -not helped by the fact that the only fresh-air vent was a door to the fire-escape the windows having been bricked up for the duration
The Matanes were men of great courage and determination an unforgettable bunch of patients Six weeks after they had been landed more dead than alive at Millbay Bonfonte was observed playing an engaging game of tennis on the 'Centre Court at RNH Plymouth
Did you see me playing tennis nurse? I play a MEAN game of tennis!

Yours truly Eva Fitzpatrick 30th December 2004
Eva Fitzpatrick
[illegible]01 (nee Travers)

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Service News

The Changing World of Military Health Care

Surgeon Vice Admiral Ian Jenkins CVO QHS FRCS
Surgeon General

Keynote International Address
Association of Military Surgeons of the United States
14 November 2004
Denver Colorado

I consid it a particular honour to be invited to deliver the 2004 AMSUS international keynote address and I am very grateful to the programme organisers for giving me this opportunity to take stock of the present status of military medicine and, at this very fitting time to consider the topic of **Military Health Care in a Changing World**

There has certainly been enormous change in the world throughout the past twenty years during which we have moved from the static and off of two great military alliances namely NATO and the Warsaw Pact each with large scale combat medical provision based largely in the then divided Europe to campaigns to combat the threats of global terror and to respond to regional crises necessitating rapid reaction forces supported by lean and flexible medical facilities Today s circumstances demand smaller more flexible medical services able to deliver a greater medical capability of a higher quality These medical services need to be expeditionary in nature with many held at high readiness [Our very recent and extremely short notice deployment to the Ivory Coast to evacuate British and other entitled foreign nationals is an example of the sort of operation that we may all face in the future]

The key defence medical outputs however remain the same trained and deployable operational medical capability and the maintenance of fit service personnel by effective health promotion education and injury prevention and by the provision of prompt and effective diagnostic treatment and rehabilitation

I would like to map out how the United Kingdom s Defence Medical Services have met these challenges by reconfiguring the provision of healthcare both at home and on deployed operations I will cover not only the nature of the operations and the political influences that have dictated our size and shape but the changes in relationships with civilian colleagues and other Nations with whom we now work so closely Associated with this we have had to respond to new national clinical quality initiatives demanding new standards of Clinical Governance in peace time and on operations and to firmly establish Military Medicine on a sound scientific and evidence base

I will describe how we provide healthcare at home to the non-deployed military population so that is critical to being able to deploy a fighting force that is fit for task and I will cover the changing face of medical support on deployed operations and how we are relying more on multinational cooperation to burden share (for example through organisations such as NATO the EU or through bilateral agreements and coalitions)

Firstly however I will set the scene by briefly describing the recent history of the UK medical services which I inherited and which will be familiar to some of you

During the Cold war we contemplated a potentially large scale war with the concomitant threat of nuclear devastation affecting much of Europe and possibly North America Large armies composing NATO and the Warsaw Pact faced each other in Europe across the North German Plains In Europe the United Kingdom

had extensive medical support in the form of mobile Field Hospitals and up to five Rear based hospitals In 1994 the UK still had eleven Military Hospitals seven in the British Isles two in Germany with a Royal Naval Hospital in Gibraltar and a Royal Air Force hospital in Cyprus

Unexpectedly however in 1982 Great Britain suddenly found itself in an expeditionary conflict 8000 miles from home in the Falkland Islands in the South Atlantic We were not well configured for such an event and we learned many lessons including the need to deploy smaller units more rapidly than before and how to deploy for operations which had not necessarily been planned or exercised This brief but intense conflict highlighted some capability deficits leading to reviews of the principles of battle surgery the management of major burns and of the importance of recognising and managing the consequences of battle stress In addition we had to reconsider the implications of long range logistics and strategic aeromedical evacuation

Following this brief expeditionary conflict the UK revisited its defence medical strategy in order to revitalise our expeditionary capability whilst maintaining our enduring contribution to the defence of Western Europe

On the 9th of November 1989 the Berlin Wall fell and with the de-escalation of the Soviet threat there was a great military and political opportunity to reduce our defence budget and to reap the benefit of the so-called peace dividend leading to our *Options for Change* initiative

However in 1990 we were thrust again into another unlikely crisis when we joined the coalition to expel the occupying Iraqi army from Kuwait. The UK mobilised 5410 medical personnel to support some 40000 British Servicemen deployed to Operation GRANBY as we called it, providing 49 surgical teams and 1850 beds including one 600 bed Field Hospital Fortunately the numbers of casualties incurred by the coalition underutilised these facilities and prompted a debate whether such a medical capability was necessary for the future Operation GRANBY provided a major lesson on the need for adequate force preparation and record keeping It highlighted the need to deploy a robust record system preferably electronic to follow the individual and which could be easily incorporated into main medical records back at home We also saw the surfacing of post-conflic syndromes which produced a montage o lessons surrounding force preparation especiall in immunisation and psychological issues the recognition and appropriate treatment.

Once again when the dust from the first Gul war settled and with the Warsaw Pact dissolve there was a further opportunity to reduce defenc expenditure which prompted a *Front line First* initiative in the United Kingdom This resulte in significant cuts in the size of our medic services a fundamental reorganisation and majo changes in the way that British militar healthcare was delivered

The most profound changes involve secondary healthcare and reduced our last thre homeland Military Hospitals to one (the Roy Naval Hospital Haslar near Portsmouth whic became in-Service) The other Militar Hospitals were replaced by five Ministry o Defence Hospital Units (MDHUs) Thes MDHUs are staffed by military medic personnel in existing National Health Servic Hospitals throughout the Country in areas o military concentration In additio organisational changes were made to th delivery of medical training, dental services an medical supply Shortly after these chang were imposed our newly elected Governme undertook a Strategic Defence Review whic recognised that we were incompletel configured to respond to the demands of moder warfare and which sought to restore the number of regular and reserve medical personnel It wa subsequently decided to close the sole survivin Military Hospital and to open a centre o academic military medicine the Royal Cent for Defence Medicine in Birmingham

We had by now moved into an era whe virtually all our secondary care medic personnel worked on a day to day basis National Health Service hospitals alongsid civilian colleagues and where the secondary ca treatment of military patients was performed civilian units

The advantages are that Defence Medic Services practitioners now have access to broader clinical specialty-mix and can mo easily retain the breadth of skills that a required for military medical operations

However it is sometimes difficult to maintain military ethos and culture in our practitioners who are solely employed in a civilian environment and NHS hospital managers undoubtedly feel deprived when significant numbers of their embedded military staff are mobilised. In Military Hospitals UK military patients had little or no waiting time for admission for elective treatment. A major disadvantage of having to rely on NHS hospitals is that we now have no influence on the waiting times for military patients to be admitted for treatment. Admission priorities are based solely on clinical urgency with no recognition of the need for Service patients to return swiftly to operational fitness or for overall operational capability. Where these criteria must be met fast track treatment in fee paying private hospitals has to be utilised.

Medical training and postgraduate education is the province of a Defence Agency (Defence Medical Education and Training Agency) and we are at present reconfiguring the strategic oversight and planning of all military healthcare into a new Headquarters Directorate.

We have increasingly recognised the need in recent years to encourage our executive colleagues to subscribe to sport and training methods that are less likely to cause injury whilst we have expanded considerably our rehabilitation services by opening new Regional Rehabilitation Units and expanding the delivery and research capability of our Defence Rehabilitation Centre at Headley Court.

Also in response to operational experience, we have reconfigured our Mental Health Services to a community based service and have closed our Military Psychiatric hospital. Service patients needing in patient psychiatric assessment and treatment are now admitted under a contract with a UK private provider. The community service is now more focused on the needs of the deployable servicemen reactions to hostile environments and associated domestic stressors.

The strategy for British Defence Medicine in the 21st Century is based on the identification and recognition of medical threats which means studying the patho physiology and devising appropriate therapies for the types of illness and injury induced by existing, new and novel weapon systems including biological and chemical agents. This can only be successful with a greater access to Medical Intelligence and by developing an expertise in analysing such information. This identifies where capability gaps exist against defined threats and where Research efforts and resources are best directed, invested in and prioritised and will generate a much stronger foundation on which to develop Medical Doctrine, clinical regimes and protocols. This in turn determines Medical Training and drive the Medical Equipment Programme. All this will better inform recruiting strategies and help to decide the specialty mix required in the Defence Medical Services of the future. This information will inform Military Doctrine and Concepts and ensure that our manpower establishments and priorities for Defence Medicine are appropriate to the delivery of Operational Capability.

The focus for much of this work are the Royal Centre for Defence Medicine, the Institute of Naval Medicine and the RAF Centre for Aviation Medicine Henlow. [RCDM also acts as our main aeromedical reception hospital and tertiary referral centre where appropriate]

During the period of reorganisation of military healthcare in the UK, the Balkans crisis was emerging and it became apparent that in order to fully resource such an operation Multinational coalitions and groups of nations had to work together to create a capability that was truly expeditionary. The crucial issue was that of interoperability to deploy quicker and more comprehensively than we had been accustomed to. This included more rapidly deployable medical assets and I will deal with these issues separately.

Throughout operations in Bosnia, Kosovo, Afghanistan and now in Iraq, we have seen various coalitions and within these various configurations of multinational medical support. From the UK's perspective we have seen cooperation in the form of the Multinational Medical Unit (MMU) in Sipovo where UK, the Netherlands (NL), Canada (CA) and Iceland have worked together through a Memorandum of Understanding (MOU). The experiences of working together have matured into robust working relationships. These have formed the basis for the development of a UK/NL

deployable R[illegible] relationships [illegible] future MMUs

In Kosovo UK personnel worked within the US Role 3 at Camp Bondsteel This arrangement highlighted that for some MMUs there may be an issue of certification of medical personnel due to national legislation and in some theatres of operation there may need to be a nominated lead Nation These environments are ideal for embedding small capability based medical teams from other Nations For example currently we have a relationship where Czech Republic surgical teams are working within the UK Role 3 in Iraq

In Afghanistan we have seen a transition from a few nations working together in the International Security Assistance Force (ISAF) when Germany provided a Role 3 at Camp Warehouse and the French Role 2 at Kabul International Airport to a Multinational brigade with 25 nations and medical support being provided by Germany in conjunction with Jordan the Netherlands Norway Spain and others We also rely on Jordanian Role 3 in Sierra Leone

One of the consistent lessons from these Multinational Medical Task Forces is that nations cannot be put together indiscriminately coalitions need to be born out of natural groupings based on familiarity of language culture professional congruence and from having exercised together previously This is particularly important for the EU and NATO with the recent expansion of both organisations and with more countries ambitious to join There is a need to concentrate on developing interoperability with smaller groups of familiar nations particularly given the potential for very rapid deployment Again the development of the UK/NL deployable Role 3 and our close relationships with Denmark and Norway are examples of natural pairing of culturally similar nations with an established rapport

NATO recognises this need for greater interoperability and has reconfigured its Allied Command structure This is epitomised by the creation of Allied Command Transformation (ACT) in Norfolk Virginia and Allied Command Operations (ACO) within its new structure ACT is the focus for the development of NATO [illegible] and concepts Many of you will b aware of the work being conducted on Allie Joint Publication (AJP) 4 10 upon which ne member nations are looking to base the national medical doctrine Additionally mo medical courses are being developed at th NATO school in Oberammergau for example o Major Incident Medical Management an Support (MIMMS) Medical Intelligence and fi Senior Medical Staff Officers to enable us all t work together more coherently ACO now ha the demanding task of becoming an effectiv Operational Headquarters and generating MML for NATO operations To this end they hav initiated a project to produce a NATO commo funded Role 2 to be manned by a lead nation coalition with other nations especially those wh do not have their own infrastructure This is new and most exciting development and pav the way for increased commonality for medic doctrine and equipment as more nations train use the common NATO infrastructure

You may think that I have forgotten to mentio the huge contribution of the United States Qui on the contrary current UK operatior invariably involve planning and working han in hand with US Forces Moreover the UK h initiatives to develop our relationship with th US Air Force as our medical teams on deploye airbases tend to share the often limited facilitie In the past and certainly during the recent Ira war US and UK medical personnel hav developed local arrangements for workin together This is obviously an area where mo can be achieved Additionally based c experience in the Balkans we are working on MMU Role 3 MOU for the Army cooperatic group of America Britain Canada and Austral [ABCA] And bringing us up to date we current have the US providing Role 3 and aeromedic evacuation for our soldiers working in support c coalition operations south of Baghdad

Traditionally Strategic Aeromedic Evacuation (AE) is usually a nation responsibility on operations However bilater arrangements exist as just mentioned and the U routinely returns other Nationals from our are of responsibility to UK where their own A service collects them Nevertheless we feel th more efficient use of AE flights is possible and am aware that an initiative by the Europea Capability Action Plan Medical Project Grou (ECAP Med PG) has resulted in the Europea

Air Group (EAG) seeping the creation of an European Union Aeromedical Evacuation Coordination Centre (EU AECC) Initially this would be to simply utilize spare capacity on Austrian flights or on empty return legs Unlike the interoperability we are striving for in other areas we recognise that this capability is best exploited by sharing capacity with other nations rather than by mixed-manning or unification of airframes or medical equipment.

In addition to interoperability the other direction in which we are moving is increased strategic agility We now have the concepts of NATO Reaction Forces (NRF) and European Battle Groups (EU BGs) These high readiness military contingents demand light small Role 2s or 3s easily deployable by air on 30 days Notice to Move (NTM) This is consistent with UK lessons identified in the recent conflict in Iraq These lessons demonstrated that 25 to 50 bed Role 3s with minimum infrastructure were required in the early insertion phases that could deploy rapidly These facilities however need to be capable of expansion to larger Role 3s with enhanced equipment scales and broader specialist expertise when the battlespace becomes more defined

I mentioned earlier the requirement to develop military healthcare based on evidence and robust science On deployment there are national differences on how peacetime standards may be maintained and when variation from the so called gold-standard/best practice is tolerable Most nations agree however that we should all aspire to meet the same standards on operations as at home wherever practicable This principle is agreed in the NATO document Military Committee (MC) 326/2 Additionally in the UK we have introduced a process of Clinical Governance following some well-publicised failures in healthcare systems and rogue doctors in our National Health Service Clinical Governance includes the requirement for ongoing audit ensuring that personnel are appropriately trained for the roles to which they are assigned and in general demonstrating that there is a process for ever-improving professional standards

It is British policy to insist that these clinical quality standards continue where possible on all exercises and operations This can be as simple as auditing Mass Casualty (MASCAL) plans and exercising appropriately or extend to include the audit of such topics as infection control and medical supply Through these processes we hope to achieve ever improving standards of healthcare on operations such as the introduction where possible of the most technologically advanced Imaging techniques and telemedicine and telediagnosis Improvement in clinical care on operations includes pre deployment preparation and post deployment follow-up and following the lessons we learned covering mental health that I mentioned earlier we have introduced systems for pre-deployment briefings and enhanced counselling support for those returning from traumatic experiences together with access when requested to skilled advice on re-integration into normal family life

There will of course be other areas for developing Defence Medicine in the 21st Century The threat of bioterrorism is here to stay and we participate in joint civilian and military planning Post-conflict Syndromes (so called Gulf War Syndrome) and Post Traumatic Stress Disorder may be inevitable products of operational deployments and mitigation strategies are being devised I believe that the anticipation of such conditions should be built into operational planning and be considered in calculating casualty rates and when forecasting the cost of deployments whether they be war fighting or peace enforcement/keeping Vaccines immunisation protocols and other medical countermeasures are being developed based on existing and new science and there may be new requirements for humanitarian and disaster relief medicine possibly of greater magnitude as world climates change

It is vital (for us) to anticipate and predict what challenges will emerge for Defence Medicine in the 21st Century and to establish new and appropriate research and clinical strategies British Defence Medicine had been largely surgicentric had incomplectly embraced the breadth of potential threat and been suboptimally configured to react to study or develop expertise in some of the areas of risk It has now been revitalised to establish it on a sound scientific and evidence base whilst recognising existing and emerging weapons systems (including psychological) and developing prophylactic countermeasures and clinical protocols for treatment.

Potential threats will change as has been witnessed in recent years and new threats will emerge from other nations, regimes, terrorists, fanatics or any combination of such. There will certainly be new weapons systems, conventional or otherwise, symmetric or asymmetric, generating new patterns of injury possibly not confining their devastation to a purely military population. We continue to develop new combat systems bringing with them a need to exploit new applications of physiology for survival as aerospace and below water battle spaces are further exploited. New technology will bring new vulnerability and will demand new medical countermeasures, some not yet contemplated. Historically military medicine has been related to surgical trauma but this may recede and new methods of environmental and personal protection will be needed. Indeed it is possible that in the future physical fighting and consequent death and injury may become less relevant if victories could be scored by non combatant methods such as electronic and cyber war? What is certain and is of particularly relevance to all volunteer forces such as ours is that perceptions are changing. People may no longer be prepared to face the military risks and sacrifice but if they do they and the public will rightly expect the highest standards of clinical care and governance for their Armed Forces.

Ladies and Gentlemen in conclusion we have seen great changes over the past 20 years. Some of those changes have been the result of political influence but most importantly lessons-learned from operations and/or peer reviewed evidence that has fashioned where we are today.

For the UK, this means a military healthcare system that is based on a core regular/full time medical cadre in partnership with the NHS at home and an increased reliance on our medical Reserve Forces. On operations the level of commitment requires us to work with other nations in various configurations to share the burden. But clearly our ability to deploy operational healthcare is reliant on the relationships that we all, you and I, develop between each other.

This highlights the importance of international meetings such as AMSUS to strengthen the ties between all our Nations and to promote the principle of medical support to operations.

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Service News

Exercise Bersama Lima 2004 – A Combined Joint Approach

Lieutenant L Hazard RN, First Lieutenant, Institute of Naval Medicine

Dark silhouettes huddled in small groups buzzing with excitement Loitering around dimly lit coaches piles of military kit and grips littered the car park tangible with expectancy This was the scene outside the Fleet Maritime Battlestaff HQ at Whale Island 4 September 2004 The next 56 hours can only be described as a holocaustic blur, with a routine of sleep battle preps) eating insistent Aircrew and the slow migration of personnel from plane to terminal with the enthusiasm and gusto of herpherded sloths.

Destination Singapore (after collecting passport stamps and fuel in Cyprus Bahrain and Colombo Sri Lanka) a haven of rich Eastern commerce British colonialism and Chinese hospitality That night we settled into our domestic battle rhythms and questioned each other on the unknown Many who attended were blissfully unaware of their role in the exercise and even as SO2 Log Med I was naively unaware of the posts full requirements Armed with a compilation of Joint Service Doctrinal publications - Joint medical doctrine NATO medical doctrine and humanitarian/disaster relief operations I felt moderately reassured that I had covered most bases Out of curiosity I phoned Med Ops in Fleet and asked them to e-mail me the latest Medical Intelligence brief for which I am hugely grateful as this became essential on day one of the exercise when called upon to give a health brief to participating maritime medical assets

So began Exercise Bersama Lima 2004 Bersama meaning Jointly and Lima translating as Five in Malay which is the number of countries that form the Five Powers Defence Agreement (FPDA)

The FPDA began in 1971 with the intention of training and maintaining the military forces of the peninsula of Malaysia and Singapore (PMS) from invasion Since then the exercise continues to grow encapsulating air land and sea organic assets through a graduated series of complex scenarios from MIOPs to land defence air superiority to amphibious warfare Under the umbrella of the Integrated Area Defence Systems (IADS) the Combined FPDA organization intends to stand up by 2011

The scenario was based on a residual threat from a hostile power demonstrating a maritime and air threat escalating to invading territorial waters and a land/Amphibious campaign This led to displacement of 40 000 refugees with high level political ramifications and the insertion and testing of the FPDA disaster relief organization

Within FPDA HQ at Paya Lebar Air Base (PLAB) the intention was to follow the same J1 J9 system used by NATO and many other forces Joint Force Logistic Component (JFLogC) Intel (J2) as it was called had legs of her own Lead single handedly by Graham, a senior and somewhat coarse rural Australian who in a Montepythonesque manner preceded to miss-forecast and tangentially obscure any coherent intelligence picture whilst stealing the thunder from even the most specialist of logisticians On one occasion after encapsulating the whole of the Ops Officers brief who needless to say voiced his dismay Graham was quoted as commenting that Ops was spitting his dummy an alternate hemisphere saying for throwing one s teddies from one s pram [1] The point being that we all had to develop in understanding of each nation s colloquialisms and in fact you can surmise that no less than 16 languages were needed to be understood the 5 nations multiplied by their 3 Services plus IT

The Health Services Support covering medical dental and humanitarian assistance was guided by the Lead Nation concept in this case Singapore Headed at Operational Control

(OPCON) by a Singaporean Major and experienced Medical Officer as Commander Medical Subordinate to him was me as the Joint Force Logistics Component Medical (JFLogC Med) and an SO3 Singaporean Medical Officer Between us we were responsible for MedOps & Plans medical logistics preventative medicine and health surveillance patient regulation aeromedical evacuation casualties transfer in rear areas and access to clinical expert advisors as well as Command advisor and planner for Humanitarian Disaster Relief Operations (HDRO) As many of the serials and exercise incorporated notional assets - a ghost fleet and fictional Brigade meant that the Component Medical Commanders where notional therefore tactical responsibility for Level 1 & 2 care was also planned by us It was often quite difficult in separating these roles in the planning phase whilst maintaining realism and the Disease & Non Battle Injuries (DNBI) figures were sent by me to me!

Another new area for me was casualty estimate planning and although predominantly a J3 & J5 task with input from J2 it fell firmly on JFLogC Med's shoulders Needless to say there is NATO guidance and a Microsoft Excel program was written that requires the user to insert the Population at Risk (PAR) and type of mission (offensive or defensive with ratios) outputting WIA KIA and Battlestress along with DNBI figures

One of the first tasks undertaken by the JFLogC Med was the management and evacuation of safeguard or known throughout FPDA as no duff casualties With the lack of any coherent multinational FPDA casualty plan it was essential that CJTF provided support Understanding that care for casualties was a national responsibility we aimed at utilizing the nearest appropriate medical assets through the nearest appropriate air/land/sea assets to the nearest appropriate HNS medical facilities This was achieved successfully on a number of occasions but still requires work in terms of national agreements

Health support communications and information have always been difficult and were identified on Op Telic as areas to be addressed between the Army and the Navy On one occasion the Malaysian SAR helicopter could not communicate with an Australian ship because they worked on different frequencies As JFLogC Med we kept hammering home the importance of a medical inclusion to the daily LogSum and received only one for the whole exercise making casualty statistics and DNBI figures frustratingly difficult to compile

One of the key areas explored in this year Exercise Bersama Lima was the insertion of large numbers of migrating people caused by conflict displacement Initially the Malaysian government led the humanitarian effort supported by the UNHCR but soon became overwhelmed and sought FPDA military assistance The exercise unfolds with 40 000 civilians streaming across the border requiring basic life support resources Having studied the Sphere principles and undertaking the DMSTC Introduction to Disaster Relief Operations Course (IDROC) I felt sanguine in advising Command on requirements matching them against force capabilities supplied by the Log cell Despite not being an expert in HDRO I chaired and co ordinated a working group including CIMIC (J9) Logs 2I/C (J4) and Land and Maritime Components (J3/J5) This worked well and absorbed experience and knowledge from all involved

From the start of the exercise there were key areas that held apparent shortfalls Firstly the other 4 nations had undertaken a week work up course prior to the official commencement of Exercise Bersama Lima 2004 When the UK team arrived the HQs were already running Once settled the next issue was the lack of state state including Orbat and organic assets register This made planning extremely difficult as it was not known which ships were deployed when their medical holding was and if support helicopters were available This enigma lasted until the end of exercise and concerned me with regard to safeguard casualties

Sensitivity was always a great consideration for the UK on FPDA exercises and although invisible to the eye remained a strategic overtone throughout The other four nations have geographic proximity and exercise familiarity as a joining factor and often voiced freely the frustrations where the UK would not To the credit of every one of the UK team officers and ratings alike they displayed professionalism and intellect as ambassadors to the flag

Socially our hosts could not be more kind welcoming or generous Colonel Tan senior logistician of the Singaporean Army and Log Cell Component Commander insisted on lunch most days with his foreign SO2s During the course of the 3 weeks we tasted chicken's feet Indonesian curried fish heads pigs colon and most other animal and fish internals a quintessential experience whilst in the far East

These exercises continue every year along with many other available through Fleet MedOps As well as professionally developing and thoroughly enjoying myself I would strongly recommend for all MS/MG SO2/3s to volunteer early to avoid disappointment and gain an experience of a lifetime

[illegible] awards for the [illegible] DCSD Capture [illegible] 2004 Winhunter and Medical Service Officer's Dinner in Kuala Berang Offer [illegible]

Service News

Royal Naval Hospital Gibraltar Centenary Celebrations, 5 August 2004

Surgeon Commander R McNeill Love RN is currently Commanding Officer, Royal Naval Hospital Gibraltar and Command Medical Officer for Gibraltar. Date: 26 November 2004.

On 5 August 2004 RNH GIBRALTAR (RNH) celebrated its Centenary year. It has been an enormous privilege to be CO of RNH at this time.

All of the staff and families at RNH were delighted that Surgeon Rear Admiral Mike and Jeanne Farquharson-Roberts, Commodore Frank and Lizzie Reed RN, Captain Lynne Gibbon QARNNS, Captain Erich Boorland RN and Cdr Chris Lloyd RN were able to travel from the UK to join us in Gibraltar for the celebrations.

The day was celebrated in two different but equally special ways. Firstly in the hospital parade ground the Command Chaplain Father Ken Bromage led a service of thanksgiving for the history of RNH and its current mission. I have taken the liberty of reproducing my speech in full as it provides a brief overview of the history of the DMS in Gibraltar, the building of RNH and the current mission we fulfil in providing modern medicine in the 21st century. I will not repeat it here. Amongst the medical VIP guests, we were honoured to be joined by HE The Governor and Lady Gill Richards, the First Sea Lord and Lady West, the Chief Minister and Health Minister of the Government of Gibraltar and Mrs and Mrs Terry Waite. The service was conducted in the warm morning sun overlooking the Bay of Gibraltar towards Algeciras in Spain. Particularly memorable was that an RNH March was composed especially for the occasion and played by the band of HM Royal Marines Scotland. On completion of the service our VIP guests were each individually hosted by members of the RNH team with coffee and then escorted to exhibition stands provided by all hospital departments demonstrating both their history and modern capabilities. Once the guests had left RNH and primary care medical staff were invited to a clear lower deck question and answer session with MDG(N) which was much appreciated by all concerned.

The afternoon was spent by many of the RNH staff frantically converting the parade ground from a church to a 220-guest ball setting!

The evening celebration consisted of the RNH Ball that commenced with drinks in the RNH gardens. 2 Gibraltar Governors and their wives, the current Governor HE Sir Francis and Lady Gill Richards and 3 previous Governor Field Marshal Sir John and Lady Chappell joined us. As the warm evening sun shone on the guests under the palm trees overlooking the streets of Gibraltar to Morocco the reception was concluded with Mess Beatings by the Band of HM Royal Marines. Probably for the only time in my career I took the salute during this impressive ceremony under the watchful etiquette gaze of WO Paul Youngman. On completion all guests adjourned to the Parade Ground for a fabulous dinner prepared by RNH naval chefs. The RM band provided 3 music themes for the evening: a dance band during dinner an unforgettable Blues Brothers concert and finally an astonishing (unprintable and unforgettable) YMCA routine. The ball ended in the early hours of the following morning.

The day was a true success and is testimony to the first class team at RNH who characteristically gave large amounts of their time to help make the day so successful. Whilst it is impossible to name everyone involved it would be wrong not to mention Lt Claire McConville QARNNS, WO Paul Youngman, Lt Cdr Roy Manwaring RN, Lt Cdr Carol Stratton QARNNS, Lt Elaine Thorpe QARNNS, POCA Nigel Wells, RNH Foreman Mr Alan Bineno and my PA Jane Payne. They worked tirelessly to encourage and lead from the front to ensure that all arrangements came together to make the day so memorable and such an impressive tribute to this distinguished RNH on last navy hospital. Here's to the next 100 years!

J Royal Naval Medical Service 2004 90 3 163 167

Service News

Remembrance Sunday in Tangier

Surgeon Commander R McNeill Love RN is currently Hospital Commander of Royal Naval Hospital Gibraltar and Command Medical Officer Gibraltar

Arriving in Tangier or Tanger as it is locally known is always exciting always different and definitely not for the faint hearted The relatively ordered departure ports of Gibraltar Algeciras or Tarifa are now distant memories as the jostling shouting smiling gesticulating and colourful moroccan welcome explodes into being as soon as the ferry gang way meets the city Night or day the experience is intense and frankly addictive[1]

View of the Port Area of Tangier with [illegible] Spain across the Strait of Gibraltar from the famous El Minzah Hotel

For the past 2 years my wife Poppy and I have been honoured to represent Commander British Forces Gibraltar at the Commonwealth War Graves at Saint Andrew s Church in Tangier in conjunction with HE the British Ambassador to Morocco and the current Defence Attaché to Rabat Lt Col Simon Lloyd MBE. Last year we brought with us our two youngest children Olivia and Hugo who both played a full part in the ceremony This year we were accompanied by Lady Caroline Biggs who was married to the recently departed Vice Admiral Sir Geoffrey Biggs Geoff and Caroline Biggs were a hugely loved couple in all communities in Gibraltar when Admiral Biggs was the Flag Officer on the Rock in the early nineties Last year I laid a wreath on behalf of CBF Gibraltar This year Lady Caroline laid CBF s wreath and I laid a wreath on behalf of RNH GIBRALTAR which is celebrating its centenary year Therefore the 2003 and 2004 Remembrance Sundays in Tangier will always provide my family with the fondest of memories as they are a combination of a dignified service of remembrance in a setting of tangible history with numerous glimpses of a bygone era which are still if not immediately obvious to the casual tourist very much alive

In 1923 Tangier was declared an international zone controlled by Belgium Britain France Holland Italy Spain Sweden Portugal and the USA Each of these countries retained its own currency banks post offices and police forces Tangier retained this unique status until just after Morocco s independence from France and Spain in 1956 A major centre of espionage during the Second World War it subsequently became one of the most fashionable Mediterranean resorts frequented by artists writers and intelligentsia social sets Indeed the 'Tangerines' were famous for their bohemian life styles and the city still attracts a colourful expatriate community Whilst now becoming immersed in a more modern Morocco this city has an atmosphere of faded glory and previously more prosperous times However the bohemian atmosphere can still be felt and this gateway city to North Africa creates a powerful allure

Saint Andrew s Church is in the heart of the city and easily visible from the Grand Socco close by the entrance to the old walled Medina This white church is invariably bathed in bright mediterranean sun and from the tower set against a blue sky proudly flies the Saint Andrew s or Saint George s flag fluttering in the warm coastal breeze It is a permanent reminder of the part that British expatriates have played in

the life of Tangier [illegible] numbers still [illegible] The [illegible] educated [illegible] fluent [illegible] smoking, husky-voiced [illegible] British Consul in Tangier [illegible] Stevens MBE still has [illegible] in the book.

St Andrew's Church [illegible] with Mustapha Chergui in the background.

To enter the church grounds, it is necessary to leave the nearby Berber street market and (taking your life in your hands) cross the chaos of the road with cars, buses, carts, mules, city and rural people all vying for a place to pass. On reaching the church entrance, in a tiny alcove in the wall resides the scribe who will write letters for anyone who is illiterate (or perhaps a little lazy) on receipt of a small fee. Entering the tranquil sub tropical and lush grounds of the church is a welcome relief as the hot sun beats down upon the cyprus trees and gently swaying palm leaves overhead creating cooler areas of shade amongst well established western gum trees, jacaranda and creepers. On arrival one is enthusiastically greeted by the Church Sexton Mustapha Chergui, who answers every question or comment with a very warm "thank you very much, thank you very much". In fact Mustapha has recently reached international fame through Michael Palin's BBC programme "Sahara". As one walks up the path to the church entrance porch, with alternate sun and shade providing contrasting colours in the gardens – the noise of Tangier receding and the noise of north African birds becoming stronger, one is [illegible] Andrew's Church [illegible] Morocco.

The [illegible] path to St Andrew's Church with St George's Flag flying from the Tower

The foundation stone of Saint Andrew's Church was laid on 1st June 1894 by Lad Drummond Hay and the church was opened fo public worship on St Andrew's day of the sam year. However the church was not consecrate until 1905. The peaceful interior of the church i a unique combination of english parish churc with the delicacy and lightness of moors design. Within the church, the Lord's Prayer i written in Arabic around the chancel arch and th walls of the choir and the alter recess are situate within white ornamental arabesqu surroundings. The church roof is made of ceda with mosaic borders. On Remembrance Sunda the tasteful Poppy decorations add a furthe colourful and thought provoking dimension as mark of respect for those who have died in th service of their mother country. The atmospher of the church is totally special and as "I vow t thee my country" is sang by the congregatio the muffled sounds of the outside Tangier stree quietly pervade the church to remind th congregation that it is not Hampshire outside bu Morocco – the nearest of the far off lands.

The wreath laying party on 14 November 2004. From left to right: the author; Lady Caroline Biggs; Lt Col Simon Lloyd, British Ambassador; Stephanie Sarles and the former Bishop of St Helena.

[illegible] months and [illegible] in the [illegible] memorial [illegible] Bill Wright [illegible]. The wreaths were laid by [illegible] from the British and [illegible] Commander British Forces [illegible] and RNH GIBRALTAR.

The [illegible] individual crosses in the Commonwealth [illegible] on 16 November 2003. Olivia and Hugo McNeill Love assist the Defence Attaché with this moving task. Piper Johnny Gonzalez, Piper of the Royal Gibraltar Regiment [illegible].

Poppy McNeill Love and Mustapha Chergui hold the RNH GIBRALTAR wreath which has been laid in this 2004 centenary year of the last RNH

We remember particularly those from Morocco who died in the First World War and who are buried elsewhere.

Norman Melville BADGER
J.H. CANSINO
Andrew de Vere MACLEAN
Edmund Morton MANSFIELD FITZGELL
James George Morton MANSFIELD FITZGERALD
Louis F. Campbell MURDOCH
Frank PATON
William SLINGER
Robert Eric SPINNEY
Clément Noel Balfour SWINLEY

And those who died in the Second World War who are buried in Tangier.

William Mayne ALLISON
Andrew Joseph BOYLES
Johan Heinrich BURMAN
John Philip DOWNS
Thomas Arthur HAMILTON
John Alfred HAWES
Terence St. Aubyn HENNING
Harold James HUTCHINSON
P.M. MacINTYRE
Edward Mortimer RODWELL
Frederick Edward TURNER
William George WALKER
An RAF Airman whose name is known to God
Charles CURTIS
Steven McKILLOP
Abraham ATTIAS

Roll of Honour copied from the programme for the 2004 Tangier Service of Remembrance

After the service this year the wreath-carrying procession left the church led by the church wardens Bishop James Johnson former Bishop of Saint Helena the British Ambassador and his wife Mr Haydon and Mrs Caroline Warren Gash the French Consul and her husband Col Simon and Mrs Bernie Lloyd and then Poppy and me We made our way through the grounds to the beautifully prepared Commonwealth War Graves for the dignified ceremony of laying the wreaths This year three wreaths were laid in front of the gravestones – those of HM Ambassador CBF Gibraltar and RNH GIBRALTAR After the wreath laying I joined Colonel Simon in laying individual crosses at the foot of each of the grave stones Last year my two younger children Olivia and Hugo performed this solemn duty Last year the 2 minutes silence was sounded on the bagpipes from a piper of the Royal Gibraltar Regiment and this year a Bugler performed this honour Again the combination of these ethereal sounds mingling with exotic birdsong and the vibrancy of Tangier offer unique memories for those privileged to attend

After the service the congregation assembles in the mid day sun to catch up on the latest Tangier news and exchange forthcoming social diary commitments They slowly disperse to resume their Tangier lives until the next week For the official party Sunday lunch is now on the programme Last year this was hosted by one of Tangier's colourful expatriate community the charming and generous writer Jonathan Dawson in his Tangier city apartment with his co-host the famous house cockerel Birdie Like Mostaphn Jonathan and Birdie is another of Michael Palin's film character Indeed in Sahara when visiting Jonathan apartment Mr Palin seemed understandably a little flustered by this very forward cockerel This year the unique warm and larger than life Stephanie Sweet hosted a lunch in her large airy apartment with the sounds of the faithful being called to prayer wafting through the garden trees onto her veranda Maybe it was her potatoes marinated in white wine – or the seriously inflammable Gin and Tonics that provided a relaxing contrast to the dignified formality of the previous remembrance ceremonies

When ever one meets the colourful expatriate Tangerines one is always left with memories to cherish This year was no different. With the first members of the congregation arriving to take their pews Simon Lloyd and I left to meet the Ambassador As we were passing a group of arriving guests one asked Simon how his family were? Simon replied that they were all well but it was sad that his dog "Fudge" had recently died Lady Gay Baird a senior member of the Tangerine social order of precedence overheard this comment and thought he was talking about the Ambassador! No matter how hard Simon tried to put the record straight Lady Baird persisted that this was a terrible matter and that she had only recently seen the Ambassador looking so well The matter could not be resolved and we had to leave the incredulous group to meet a very much alive Ambassador The matter was then compounded by the fact that the Ambassador was subsequently informed by a grieving Lady Baird that his Defence Attaché had told her that he was no longer in this world As always huge laughs subsequently ensued

Lady Gay Baird explaining to Her Britannic Majesty's Ambassador how delighted she was that he was still alive! The Bishop is obviously reassured by this good news!

Why have I written this article? It is because I hope that when you attend the next remembrance service you in my spare a small thought for the assembled Saint Andrew's congregation honouring the few brave men in a very small corner of a foreign land that will be forever England" Although one can never afford to become complacent on the numerous times we have visited Morocco my family have always been touched by the warmth of the people their ready smiles and laughter their appreciation of irony and their willingness to welcome all visitors to their kingdom In the current international climate the fact that this ceremony can continue year by year is testimony to a very special country

L/Cpl Bacon Lance Corp of Drums of the Royal Gibraltar Regiment sounds his bugle in the grounds of St Andrew's Church at the 2004 Service of Remembrance

Whilst we have been based in Gibraltar we have visited Morocco during many of our leave periods Whether it is the royal and diplomatic capital city of Rabat the ancient walled islamic scholarly capital of Fez the 24 hour vibrancy of the famous

Djemaa el Fna square of Marrakesh the Rif mountain town of Chefchaouen with its famous blue houses the desolate but inspiring Atlas mountains or the awesome wilderness of the Sahara desert, the history of the nation the colours of the land and the vibrancy of the peoples of Morocco can create a heady mix This is a country that must be visited and is definitely one of the attractions of an appointment to Gibraltar

I will finish this brief article with a quote from P B Rogers Book "Restless for Morocco" published by The Book Guild in 2001 Mr Rogers describes his travels within the Kingdom whilst serving as British Officer within the UN mission in the Western Sahara Avoiding the usual top hotel leave destinations he shunned convention and travelled to the real Morocco He writes in a style that transports the reader to the destination of the chapter concerned and it is evident that he developed a deep love for this country On return to London whilst at a smart cocktail party making small talk to an old friend, he recalls how his mind uncontrollably wandered back to his travels in Morocco He writes Suddenly in my mind I hear a crack Quite unmistakable The sound of a big atlantic roller breaking far out after a lull in the waves It is certain that if I look up I will see the first tell tale strip of foam showing white against deep green sea He continues I am on my own with all the world to myself If I wait long enough I can watch the sun slide into the sea hear the crickets night-time call see the heavens tremble with stars feel on my face the dry wind that has touched both desert and mountain"

I know what he means Therefore, if my mind too begins to wander whilst I sit at my desk in a future appointment in England perhaps you will indulge me with a little understanding

Service news

Leading Medical Assistant Scott Gilbert - RN Golf Champion

Recently Leading Medical Assistant Scott Gilbert retained the individual RN Golf Championship title This is a highly commendable achievement and just reward for the hard work put in by Scott balancing the demands of his student nurse training and the call of the greens

LMA Gilbert joined the Royal Navy in 1997 and prior to starting student nurse training previously worked at HMS WARRIOR and with the Royal Marines (CTCRM Lympstone and Commando Logistics Regiment) spending six months in Kosovo during 2000 2001 After completing both leadership and professional qualifying courses Gilbert was promoted to Leading Hand (LH) and drafted to Royal Hospital Haslar plaster room Success on the BOA/AOT/SON Orthopaedic Plaster Technicians course at Royal National Orthopaedic Hospital Stanmore soon followed LMA Gilbert is now in his third and final year of nurse training at Portsmouth University having just completed a 10 week placement at MDHU Portsmouth With six months to go LMA Gilbert has enjoyed his training in most areas of clinical practice especially Trauma/Orthopaedics, Renal and A&E In the future Gilbert would like to further his education to degree level hopefully completing a specialist course in one of these areas His family continue to provide invaluable support in both his professional and sporting life and LMA Gilbert is looking forward to the challenges of nursing and promotion to senior rate.

When not studying LMA Gilbert enjoys playing golf and has done so since an early age Currently playing off a handicap of scratch thanks to his father and plenty of practice, he has represented his County the Royal Navy and Combined Services He is now focused on helping the RN team regain the Inter Service crown in September 2004

Inter-Services Fencing – June 2004

In May 2004 QARNNS Lieutenants Andreanna Glendinning and Sarah Thompson took part in the Royal Navy Fencing Championships Lieutenant Glendinning representing Plymouth Command and Lieutenant Thompson from Portsmouth Command– both had individual successes winning bronze medals in the disciplines of foil and epee respectively Both were selected to represent the Royal Navy in the inter services championships in June

The inter services championships are hosted by a different service each year on a rotation basis This year the Navy were the hosts and the championships were held at HMS NELSON The championships comprise of a mixed three weapon triangular followed by individual mens and ladies competitions in each weapon foil epeé and sabre It was the first time in 16 years that QARNNS have represented the Navy at fencing and both Lieutenant Glendinning and Lieutenant Thompson fought all three weapons After a hard fought competition the Royal Navy were delighted to find themselves the winners of the triangular competition for the first time since 1957 Lieutenant Thompson also had some personal success winning the ladies epeé plate competition

For anyone interested in fencing the Navy club is based at HMS SULTAN and meets on Tuesday evenings from 1900 to 2100 All standards are welcome – from complete beginners to international!

J Royal Naval Medical Service 2004 90 3 169 171

Service News

I'm a Medic get me out of here!!

LMA C Wilson

It was what appeared to be a normal day at the office at Dermford hospital I had only recently joined the Service Patient administration Department I was looking forward to a nice 9 to 5 job a bit of down time Well that s what I thought to myself after finishing my first Sea Draft

I sat there looking at the pile of paperwork some things don't change no matter where you work Then I heard my name being beckoned into the office It turned out I would not have to stare at the mountain of paperwork very much longer I was going on Exercise Western Rumba 04 What on earth was that? It sounded like a fancy dance class to me something that would be held down the local gym but no I would be going much further a field to that I was going to the broccoli the big I" the jungle Ghana in Africa to be precise wow bring it on what an excellent opportunity I could not wait!

The next few weeks I kept having visions of I m a celebrity get me out of here with big boxes full of spiders, snakes and other creepy crawlies running around freaking everybody out My friends tried to be helpful and gave me good advice along the lines of everything wants to eat you build its home in you or use you as an incubator Thanks guys I m sure you r trying to help really

Well I survived the ordeal and live to pass on the highlights and the lowlights

The exercise was a month and a half in duration It incorporated approximately 160 personnel from various Units including 42 Cdo RM CHF UKLF CSG CLR Brigade Recce Troop (formally BPT) of 3 Cdo Bde and DMETA The aim of the exercise was to take personnel with little or no jungle experience and teach them basic jungle skills like survival river crossings and Close Target Reconnaissance This would culminate in a final Exercise which would incorporate all the skills taught in finding fixing and striking an enemy location

There were two main locations during the Exercise The Airport of disembarkation (APOD) at Accra Airport and the Jungle Warfare School (JWS) used as the Forward Mounting Base (FMB)

The APOD was basically a large hanger with no running water or ablutions this is where the journey started The facilities were limited basically we had the hanger and then with time the Solar showers and porta loos arrived This location was situated near Accra the capital of Ghana It was extremely close to the airport in which we flew into and you could practically wave at the passengers on the aircraft as they flew past It was an excellent landing site for the Sea Kings which we used as Initial Response Teams (IRT) we had three airframes in total The nearest hospital was called 37 hospital it was staffed by the Ghanaian Army and was a seven minute drive from the APOD into Accra.

The JWS was approximately 3 hours North by road or should I say dirt track Once you get out of Accra town centre the tarmac runs out and the condition of the roads deteriorated to a dusty track or muddy bog depending on the weather conditions However it could be reached in 40 minutes by air The JWS was more established than the APOD As it had good facilities the Ghanaian Military used it as a training school There were huts in the trees that we used as classrooms which were cool and shaded It also had hard standing accommodation although this was limited and tents were soon erected for the majority of personnel There were also permanent showers and abolitions however these proved to be quite ineffective and a lot of the time you had to run around in the shower to try and get wet The water tank that supplied the area was obviously not used to catering for the numbers of people that were now using them and they ran out too frequently

On the few occasions we utilized 37 hospital we found their hospitality impeccable and all of our patients were fast tracked and were taken to the front of every queue There were no language barriers as most people spoke English Everyone was very friendly and wanted to talk to you and help out wherever possible

My first encounter with the hospital was an injury with suspected spinal trauma We had received communication that one of the exercise participants had a possible spinal injury due to a bad landing whilst abseiling My colleague and myself grabbed our trauma kit and headed for the Helo We then flew straight to the Grid Reference to receive the casualty After arriving at the site and assessing the casualty we flew straight from the jungle to 37 hospital The landing site which also doubled up as the local football pitch caused us problems as there was a match in progress and when we came in to land we blew away most of the participants and their goal posts with the down draft from the Sea King.

As soon as we landed we were greeted by an army of Ghanaian soldiers who jumped out of an ambulance and tried to assist us with the transportation of our casualty from the aircraft to the hospital

Going through the doors of the A+E department was an eye opener There were patients just lying all over the floor in corridors and with no beds or blankets to protect them Few were lucky enough even to be on a trolley The medical equipment available to the Ghanaians looked ancient close to failure and in short supply Unlike UK hospitals where a storeroom would be used for medical equipment not in use Their equipment was loaded onto trolleys and left around the hospital with no sense of organisation and no effort was made to keep the items away from prying eyes or sticky fingers It was bizarre as I walked from this crammed disorganised room to the x ray department it was like travelling down a time warp and landing in a different hospital This department was really quite nouveaux and modern in fact the best x ray department I have ever seen

Where possible they gave our patients a single ward and on-suite facilities In fact they looked after our casualties so well we had trouble trying to get them back to work! The Ghanaians seemed reluctant to discharge the patients from hospital even though there was no real clinical reason for them to stay We wondered if they were trying to keep them in for financial reasons? But perhaps this is an uncharitable thought

The only negative aspect with the hospital was that we never received any reports on samples we had given to the laboratories for analysis We were very persistent in requesting reports from them but could only get verbal reports which were vague and unspecific

I was required to be Winch trained, it was deemed necessary for this exercise due to the constraints imposed by the terrain and the area that we would be providing medical cover in Travelling through the jungle for even a short distance with the relevant medical equipment and difficulty caused by the density of the jungle itself would take a vast amount of time, and there was always the chance that we would miss the rendezvous with the casualty I had no prior experience of winching before coming on the exercise so we trained in the use of double and single straps seated straps and ascending and descending with the stretcher These periods of training were very informative and proved invaluable when later I was required to use these skills to collect casualties

My Top Tips for winching are

1 Don t tighten your harness too much because if you pull the shoulder straps too tight you end up in an egg position and will find that when you try to touch down on the ground when you are wearing all of the trauma kit, you will be too heavy and fall flat on you back feet in the air like a turtle and find it difficult to get up

2 Never touch the stretcher before it earths itself on the ground As the electric shock you receive will make you jump 6 foot into the air

3 When you start spinning just relax you can control it, you have to go with the flow

The biggest problem I found was communication When I was dropped on the ground my only way of communicating with the Helo was by hand signals which we had pre arranged We decided on a signal to use that

would request the stretcher to be winched up and to get the Helo to fly in circles around the site These caused considerable problems as we had limited signals If you were dropped through the canopy the Helo could no longer see you and therefore signals became ineffective If weather conditions were bad you became even more difficult to see Communication are obviously a two way problem At one stage I was dropped at a Grid Reference to receive a casualty but when I landed and explored the area looking for the casualty I found no one Luckily as the Helo was circling overhead they spotted where the casualty was but unfortunately they had no way of informing me on the ground

The other main problem we encountered was the weather This was principally being grounded by severe electrical storms When it rained it came down as a deluge these were proper tropical storms and came down extremely heavy causing the visibility to drop to only a couple of meters One day when we were in flight the pilot had to make an emergency landing and we ended up sitting on a dirt track in the middle of nowhere We all laughed at the prospect of a vehicle coming face to face with us travelling down the track and as if by magic a car came along the track and must have had the shock of its life Thank goodness it did not steam head on into us.

On the whole we did not have to deal with many serious medical dramas The exercise started off with a snakebite which put everybody on edge but it was soon business as normal We never had any tropical illnesses of note although we are now all experts in doing malaria tests The trouble with these tests was that the environment was so hot that the test kept drying up making them invalid The test works via a capillary action where the fluid is drawn along a test strip over an indicator bar and the severe heat meant it could not functiou properly

We did have an outbreak of D&V although we were unable to establish a cause Samples were sent to the 37 hospital however the results that we got back did not identify or isolate any pathogens We had two personnel trained in Environmental health to help combat the problem by enforcing infection control measures to minimise the outbreak.

Summary

This was a very beneficial exercise for myself as it was my first deployment away and I feel I gained a lot of potentially valuable experience from it Given the changing role of the RN medic in increasingly more tri Service I would highly recommend this exercise to any of my colleagues who had the opportunity of attending The exercise ran very smoothly from a medical point of view and the main things I have taken onboard are as listed below

Points Achieved

1 Experience in the field whilst in a Jungle environment.
2 Basic survival skills (Must be able to look after yourself before you can look after a patient)
3 Dealing with casualties in an Airframe
4 Casualty extraction through the canopy (Dry winching)
5 Working within a deployed Medical Section
6 Dealing with limited resources

Problems identified

1 Short notice deployment
2 No prior Jungle training
3 No prior tropical medicine training
4 Limited initial Jungle training during acclimatisation as we were giving medical briefs during this period
5 Communication Difficulties on ground
6 The Med Section was requested instead of a Regimental Aid Post (RAP) It posed problems with scales and availability of these stores
7 No official reports received from 37 hospital

Service News

Practice What You Preach!

Lieutenant P Green RN

After decades of providing advice on fitness and training regimes to the Royal Navy in particular the Royal Marines the Institute of Naval Medicine now has its own fitness suite In the past staff at INM had the choice of either a run around Stokes Bay not nice in the middle of winter or travelling down to Fort Blockhouse (formerly HMS Dolphin) However the introduction of compulsory fitness testing and personnel functioning standards (PFS) allowing Naval personnel time to train during working hours meant that a more convenient and comfortable means of training was required

The project was started in 2001 during the tenure of Surgeon Commodore Nick Baldock who through some creative accounting secured the funding for the build The project was accelerated by Surgeon Commodore (now Surgeon Rear Admiral) Phil Raphaelli who oversaw the construction of the facility and finally completed during the reign of Commodore Frank Reed the present MOIC who put in place the funding for all the equipment

The facility now known as "The Baldock Suite was officially opened on 24 Novembe 2004 by Surgeon Commodore Baldock and will no doubt be fully utilised by all the staff at INM even allowing some to practice what the preach

Service News

HONOURS AND AWARDS

OBE
Surgeon Captain Alasdair Walker FRCS

CVO
Surgeon Captain David Swann LVO RN(Rtd)

PROMOTIONS

To Surgeon Commodore
Surgeon Captain Noel Bevan to be Defence Post Graduate Medical Dean

To Surgeon Commodore (D)
Surgeon Captain (D) Graham Morrison to be Director Naval Dental Service

ACADEMIC ACHIEVEMENTS
brought to the editors attention

Surgeon Commander Robin McNeill Love – MFOM and MSc CCST In Occupational Medicine

Surgeon Commander Simon Leigh Smith – FFAEM Specialty Exit Examination

This cartoon was discovered in a cupboard in the Appointer's outer office when they recently moved

If anyone can identify the model please let us know

Obituary

Surgeon Commodore (D) Geoffrey William Myers OBE QHDS Royal Navy

Surgeon Commodore (D) Geoffrey William Myers the Director Naval Dental Services died in a road traffic accident on Sunday 17 October 2004 aged 57

He was born near Rotherham in Yorkshire on 14 June 1947 As a boy he was a member and leader of his church choir and altar server for eight years He was also a boy scout and senior scout He attended Leeds Grammar School where he was awarded the Ada Emmott Exhibition before entering Leeds Dental School in 1965 He was granted a Royal Navy cadetship in 1968 and became a Surgeon Lieutenant (D) in 1970 following time in general dental practice and a house officer appointment

His early career included time at sea in HMS BULWARK and a variety of shore clinics at home and abroad In 1980 he attended the Eastman Dental Institute and gained an MSc in Conservative Dentistry During the Falkland Islands crisis his welfare work with the families of the bereaved and injured was recognised by a Flag Officer Commendation Following a 2 year exchange appointment with the United States Navy Dental Corps based in Norfolk, Virginia he moved to Scotland as Senior Dental Surgeon HMS COCHRANE In 1989 he became the first Royal Navy dentist to attend the Joint Service Defence College at Greenwich An appointment to Commander in Chief Fleet's Headquarters as Deputy Fleet Medical Officer followed just 4 months before the 1990 Iraqi invasion of Kuwait During the first Gulf War he was significantly involved in the establishment of the Primary Casualty Receiving Ship RFA ARGUS and for ensuring that the medical and dental organisation was able to support the deployed Royal Navy and Royal Marine units His work was recognised by the award of the OBE

He became Deputy Director Naval Dental Service in the rank of Surgeon Captain (D) during Defence Cost Study 15 This appointment led to his early participation in the creation of the Defence Dental Agency in 1996 Subsequently he held the posts of Deputy Director Plans and Resources and Deputy Director Clinical Services within that Agency He became the first dentist on Surgeon General's staff in 1999 as the Assistant Director for Medical Reserves Recruiting and Training In 2001 he became Director Royal Naval Dental Services in the rank of Surgeon Commodore and was appointed QHDS later that year His most recent role was as Director Policy and Plans and Chief of Staff at the Defence Dental Agency Headquarters

Geoff was certainly the most experienced staff officer the branch has had and has played a pivotal role in the development of the Royal Naval Dental Services over the past decade

The day before his death he was elected an Honorary Fellow of the Faculty of General Dental Practitioners which he served as a Board member

Listing his career achievements does not give a full picture of the man Geoff was a Yorkshireman and proud of the fact During his time in the sixth form he was drummer and later lead singer in a locally successful rock band Rock music was a lifelong passion regularly demonstrated by his virtuoso performances on the dance floor Above all Geoff was loyal to the Service, his colleagues and his friends a quality he combined with a caring attitude and a strong record of public service He was devoted to his family and was immeasurably proud of his children's achievements. His boundless energy and commitment to all that he undertook was his hallmark. He was a generous and entertaining host none of his many friends will forget Geoff disappearing into a cold winter's night to cook the evening's main course on his barbecue His hobbies included furniture restoration, gardening and wine collection However much of his spare time was spent on the touchline or around the cricket oval supporting his children

Geoff's many colleagues and friends will wish to extend their heart felt sympathies to his wife Denise their sons William and Simon and Geoff's daughter Samantha

Surgeon Commodore P R F Tolley OBE RN

Obituary

Surgeon Commander Alastair Alexander Russell RN(Rtd) – died 1 August 2004 age 70

Alastair was educated at George Watson s College Edinburgh and gained his medical degree at Edinburgh University in 1957

He joined the Royal Navy in October 1958 and retired 1980

After serving at sea on HMS CEYLON he returned to Royal Naval Hospital Haslar where we first met and there he discovered an interest in ophthalmology under the fatherly eye of Surgeon Captain Dudley Gurd.

While serving at Haslar he achieved the Royal College of Surgeon s in Ophthalmology and was appointed Specialist in Ophthalmology In 1964 he was sent as Assistant Surgeon to the Hospital of St John in Jerusalem where he spent a happy 6 months gaining valuable experience in all aspects of eye surgery

For a man of such a large frame he had small hands ideal for an eye surgeon and he made good use of them

Following his return to Royal Naval Hospital Haslar he met and married Anne Cooper who was a ward sister at the hospital

Thereafter he served as ophthalmic specialist and senior ophthalmic specialist in the RN hospitals at Gibraltar Singapore and lastly at Plymouth

While serving at Royal Naval Hospital Stonehouse he was invited to apply for the post of Associate Specialist in Ophthalmology at the Royal Eye Infirmary in 1980 After taking early retirement from the Royal Navy he joined his friends and colleagues there and remained in full time employment until 65

During his time at the Infirmary he made many friends and was much respected as evidenced by the number of hospital staff who attended his Thanksgiving Service held shortly after his death

Alastair and his family settled in a fine old Edwardian house at Cadleigh where he established a large and beautiful garden with panoramic views across to Dartmoor He was a man of eclectic tastes and a bibliophile and built up an extensive reference library at the house

With Anne and their two children he travelled widely in France and acquired an almost encyclopaedic knowledge of French wines and their origins as well as an extensive cellar from both of which I was happy to benefit on many occasions He was treasurer of the Ivybridge RNLI fund raising committee for over 10 years and was awarded the Institute s silver medal

In his last two years the arrival of a granddaughter was a great joy to him

The sympathy of all his naval colleagues go to Anne and family and they can be assured that the loss of his larger than life persona has left a gap in the lives of his many friends not least in mine

Dr A Kintoul

Notice has been received of the deaths of the following:

Surgeon Captain Robert Wilson Duncan Royal Navy

Surgeon Captain (D) David Martin Lindsay BDS MSc Royal Navy

Surgeon Commander Roy Norman Ridler Royal Navy

Lieutenant (MS) Les Dickie Royal Navy

The editor would welcome any words in memory of them.

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